FLIGHT and The AIRCRAFT ENGINEER

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The Outlook

Straws

WE all accept without question the old saw, *Si vis pacem, para bellum,* even if we do not always follow the advice. We are less inclined to see the need for preparing for peace in time of war. Yet in many ways it is every bit as necessary. We have referred on several occasions recently to the question of civil aviation after this war, and certain events have occurred lately which lend point to our contention that Great Britain cannot afford to neglect civil aviation as it has been neglected since September 3rd, 1939.

In the United States Mr. J. Parker Van Zandt, who is technical and economic consultant to the Civil Aeronautics Board, has impressed upon his countrymen, through a talk to the South-West Aviation Conference, the need for a strong national air policy. In Canada, according to our contemporary, *American Aviation*, the Canadian Pacific Railroad is digging itself in and, it is averred, preparing to make Montreal rather than London the hub of post-war empire aviation. Mr. Juan Trippe, president of Pan American Airways, has delivered the Wilbur Wright lecture to the Royal Aeronautical Society, and has given an indication not only of the very thorough and excellent work done by that company on the Atlantic route, but also of its determination to improve that service. Summaries of the two last-mentioned subjects are published on another page of this issue.

Time for Action

THESE various "straws which show which way the wind is blowing" should give Great Britain food for thought. Sir Kingsley Wood once said, while he was Air Minister, that first things must come first. That still applies so far as actual production is concerned. No one would suggest that the country could afford to let any of our aircraft constructors divert their productive capacity from military to civil types, but it is becoming quite evident that it is high time we began to *plan*. The removal of a few picked men from war-time activities to long-range planning for post-war development could make no appreciable difference to the country's war effort.

As a first step it would appear that a committee of enquiry might be set up to examine the main policy of British post-war civil aviation. We believe that Lt. Col. Sir Francis Shelmerdine is retiring this autumn from the post of Director-General of Civil Aviation. It may be that in present circumstances no successor will be appointed, but the services of Sir Francis could be very usefully employed on such a committee. It should obviously work in close co-operation with the Ministry of Reconstruction, and representatives of all sections of the Empire should be included. It might also be necessary to ascertain the views of those foreign governments which are now operating in this country.

When the committee had formed certain conclusions as to fundamental policy, a pool of designers should be formed to take in hand the work of preparing the designs for such types of commercial aircraft as the general policy had indicated to be desirable. The great aim should, of course, be to avoid any unnecessary time lag between the signing of peace or an armistice and the putting into operation the new commercial types. That there must be a gap is inevitable, even if all detail drawings were prepared beforehand, since it would take time to get into production. That gap could probably be filled, not too efficiently, perhaps, but fairly effec-

tively, by making temporary use of a certain number of converted military types of aircraft.

That the whole subject bristles with difficulties is all too patent. But it is no manner of use shirking these if the Empire is to take its place in the post-war development. We must face up to them.

Radiolocation

OUR new device for locating enemy aircraft was disclosed in general principle with a fanfare of trumpets last week. Though the principle itself is not new, British scientists have earned undying glory by applying it in this particular manner. Devices measuring the depth of water by timing the lapse between the sending of an aural signal and the reception of its reflection or echo have been well known for years. The merit of the new Radiolocation invention, as it has been officially called, and for which the nation owes a debt of gratitude to Mr. Watson Watt, Sir Frank Smith and others, is that the same idea has been applied to ether waves. Details of how that has been achieved are for the moment secret, for obvious reasons.

That the nation should be told as much as they have been is all to the good. But one cannot help feeling that greater precautions might have been taken in one particular direction. Technically speaking, nothing was disclosed which could possibly have given information to the enemy that he did not already possess or guess. In that way no harm was done. But apparently the censor has no power over sub-editors, or was not given the opportunity to exercise that power, for a number of daily papers appeared the next morning with absurd headlines, such as "The Night Bomber Beaten."

Very naturally, the man in the street was elated. One had but to travel by tube and bus in London, for example, or forgather in clubs, to overhear conversations which clearly indicated that the long lapse of time since the last London "blitz" was readily ascribed to the efficacy of the new device.

University Air Candidates

IT was announced some time ago that eight Universities have agreed to accept young men selected by the Air Ministry and afford them opportunities for study preparatory to their entry into the Air Force. The Air Ministry aims at having several hundred men in training at the various Universities, and the first course is now in training.

The idea is to get boys from public and secondary schools who are likely to make good officers as either pilots or observers. They must hold a school certificate or its equivalent and be between the ages of 17 and 18 years 8 months; they must attest for the R.A.F. There is no entrance examination (the idea of holding one was considered but rejected), and the first step for a candidate is to get a nomination from the headmaster of his school. The men then go before an Air Ministry Selection Board.

When at the Universities they are counted as on "deferred service," but get no pay. Against this the entire expenses of their board, lodging, and tuition are met by the Air Ministry. In special cases the Ministry will even pay for their necessary expenses as undergraduates, such as subscriptions to games clubs, laundry, and the like. On parade they will wear uniform.

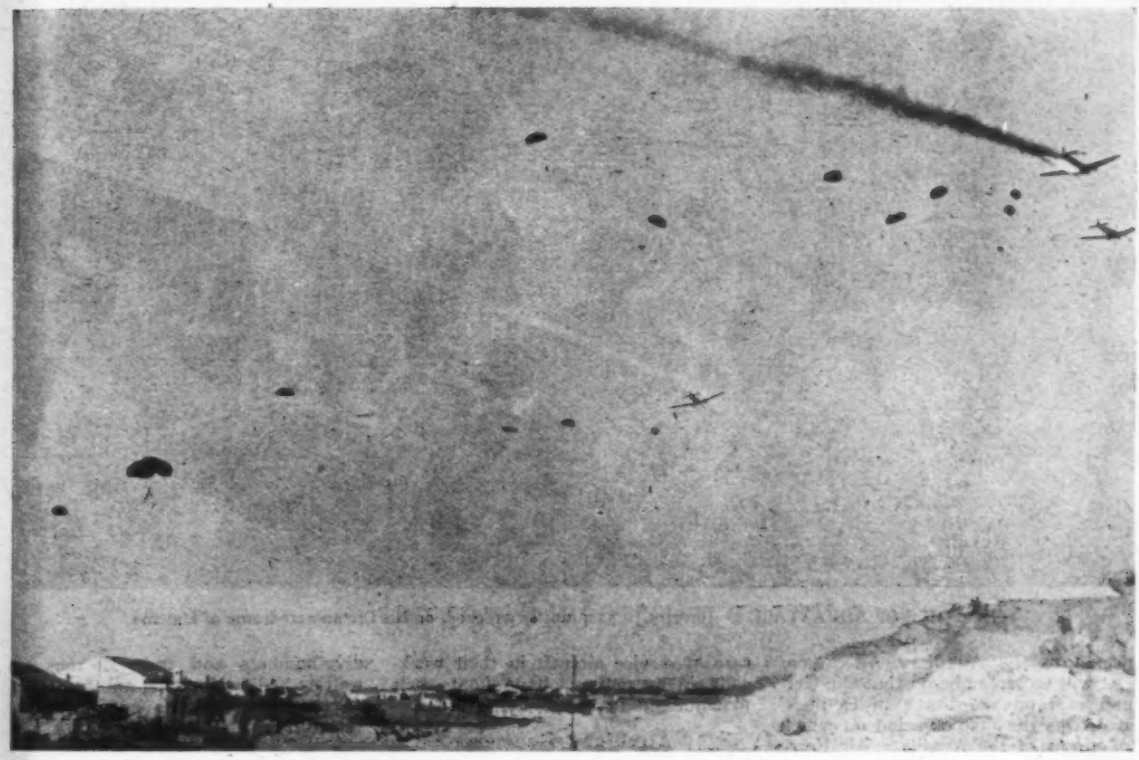
The course at the Universities lasts for some months and takes the place of the time spent by other entrants at an Initial Training Wing. The course includes all the subjects usually taught at an I.T.W., including instruction in the Link trainer, while the Universities arrange for lectures on other useful subjects as well. At the end of the course the candidates, if approved, will go straight to an Elementary Flying Training School. If any of the men wish to go back to their University after the war and take a degree, they will be given credit for the time spent there on this training.

Though a University in time of war is a very different place from one in time of peace, the advantages of this course are so obvious that it will be surprising (and disappointing) if there is not keen competition next October for the places on the next course.

(Above) Shortage of uniforms, which will soon be made good, does not hold up parades in the University Air Squadrons, where keenness is the hallmark of these potential R.A.F. officers. (Left) An instructor explains the controls to a University class, using an obsolete type suitably stripped.

War in the Air

Heavy Raids on the Ruhr : A.A.F. Record : R.A.F. at Sollum and in Syria



CRETAN ATTACK : An untouched-up photograph of a Ju 52 in flames, and parachute troops and equipment descending in Crete. The heavy items of equipment are supported by multiple parachutes.

THE method of spotting-up a certain number of night-bombers which has been given the name of Radiolocation is dealt with in another part of this issue, and so we may pass on, with the remark that German night-bombers have seldom escaped scot-free, even on nights when only a few have been over Great Britain.

During the first three weeks of June there was certainly very little activity by the *Luftwaffe* against this country, either by day or night. The weather was mostly bad, but it was not bad enough to prevent the R.A.F. from raiding the Ruhr, where Cologne and other industrial towns had to endure a succession of very heavy attacks by night. There are various possible explanations of the comparative quiescence of the *Luftwaffe* for so long. It can hardly be attributed to the need for refitting after the invasion of Greece and Crete. The German air losses in those operations were heavy, but they must have fallen on groups allocated to the South-East of Europe. It is understood that the Balkans did not draw off any number of heavy bombers from Northern France. The same reasoning doubtless applies to the recent massing of strong German forces of all arms on the frontier of Russia. But the German High Command never likes to be heavily engaged on more than one front at the same time, and, while its eyes are turned to the East, it may have passed the word to mark-time in the northern area of the war.

On the British side in this area the Coastal Command has rivalled the Bomber Command in its activities against the enemy. There has been much movement of German shipping along the coasts of the countries occupied by the enemy, and on the supply ships both Commands have been showering bombs and torpedoes. The enemy's loss in tankers and other ships has been very considerable.

The Coastal Command has, of course, maintained its patrols over the Atlantic, and these scouts sometimes meet with adventure. One day a Catalina flying boat of Coastal Command, while on Atlantic patrol off Gibraltar, sighted four enemy aircraft attempting to attack shipping. The Catalina engaged each of the four in turn and all were seen to be damaged before they broke off the engagement. The Catalina, which sustained no casualties and received only superficial damage, resumed its patrol. One or more of the enemy machines is believed to have crashed in Portugal.

The Bomber Command has also engaged in a number of audacious sweeps over Northern France by daylight, usually accompanied by escorts of fighters. In these operations there have been several encounters with the Me 109F, a "hotted-up" version of our old friend. There have been losses on both sides, but the Spitfires and Hurricanes are still on top.

Talking of fighter squadrons, probably few members of the public realise how much is owed to our citizen

THE PRICE OF AIR ATTACK : Junkers Ju 52s, mostly wrecked, on the Cretan aerodrome of Maleme.

airmen of the Auxiliary Air Force.

It will be remembered that the German raid on the Forth in October, 1939, was the first occasion on which squadrons of the Auxiliary Air Force went into action. On that occasion the Spitfires of Nos. 602 (City of Glasgow) and 603 (City of Edinburgh) shot down probably 50 per cent. of the German raiders. As somebody wittily remarked, the A.A.F. then lost its amateur status. Since then pilots of the Auxiliary Air Force have destroyed over 900 enemy aircraft—a quarter of the total number shot down by Fighter Command in defence of this country.

In the Battle of Britain last year the Auxiliary squadrons accounted for some 700 of the 2,375 enemy machines which were known to have been destroyed. In other words, nearly one in three of the enemy destroyed in the big battles of August and September fell to the guns of a Spitfire or Hurricane belonging to an Auxiliary squadron. To-day four of these squadrons each have over 100 enemy aircraft to their credit and several more are nearing their century.

It has not, of course, been possible to keep the squadrons manned exclusively by Auxiliary pilots, but the ground staffs have changed little since the war began, and mechanics, fitters and armourers, who learned to take care of service aircraft in their week-ends in peacetime, have kept their machines in first-class flying order.

Auxiliary Records

TWO of the A.A.F. squadrons were ordered to France to take their places beside regular R.A.F. Fighter squadrons in the front line. The County of Durham and the County of Surrey squadrons were selected and they were joined by the County of Nottingham and County of Gloucester squadrons when fighting began on May 10. In the short time these squadrons were in action they accounted for over 100 of the enemy.

Here are some of the A.A.F. achievements during the Battle of Britain :—

13.8.'40.—The County of London squadron destroyed 13 enemy machines, probably destroyed 14, and damaged 15 others.

25.8.'40.—In their first big battle near Dorchester, the City of Glasgow squadron shot down 12 of the enemy without losing one of their own pilots.

31.8.'40.—The City of Edinburgh squadron destroyed 14 of the enemy and probably three more. Ten of these were Me.109s.

13.8.'40.—Within the space of a few minutes near Portland the West Riding squadron shot down nine Ju.87 dive-bombers and four Me.109s, as well as badly damaging another seven of the enemy. The squadron sustained no casualties.

24.8.'40.—A sergeant pilot of the County of Chester squadron shot down five of his squadron's bag of seven on this day. On another day the squadron shot down six bombers and five fighters which attacked their aerodrome.

15.8.'40.—The County of Gloucester squadron destroyed 12 enemy machines. Ten of them were Ju.87s shot down out of a formation of 20 which they met off the Kent Coast.

Foremost among Britain's night fighters is the County of Middlesex squadron, which has destroyed more than 30 German night raiders.

In the Middle East

WHILE General Maitland Wilson has been pushing forward with calculated deliberation in Syria, the enemy has not been left unworried in North Africa. Bombers have continued to make night attacks on the harbour at Benghazi, damaging the moles and the shipping there. At the same time our forces suddenly grew very active in the region round Sollum and Fort Capuzzo, and lively fighting went on there for several days. The enemy was provoked into showing his hand

FROM PAN AM TO BOA

engines of some 1,500 h.p. each it had a top speed of about 190 m.p.h., and a cruising speed of some 160 m.p.h. The normal maximum range was 4,000 miles with 4,200 gallons of fuel. In his Wilbur Wright lecture to the Royal Aeronautical Society (reported elsewhere in this issue) Mr. Juan Trippe mentioned some very interesting facts and experiences from Pan American's operation of the machines. The type may be said to have been thoroughly proved, and the three 314—A's should prove a very valuable addition to the fleet of British Overseas Airways. An impression of a flight in one of the 314's from New York to Bermuda by Mr. Griffith Brewer, president of the Royal Aeronautical Society, was published in *Flight* of May 22, 1941.

Some idea of the shape of the rear step of the *Bristol* may be formed from this picture, which also shows the somewhat unusual tail.

MONTREAL versus LONDON

Canadian Pacific Railway's Ambitions

The following illuminating article appeared in the May 1st issue of our contemporary, "American Aviation." Editorial comment on it will be found elsewhere in this issue.

A GIGANTIC air transport development is in the making in Canada which will place this northern neighbour of the U.S. in a strategic position after the war is over as the focal point for air transportation to the Orient, to Europe, and to all of the British Commonwealth of nations.

The rising new factor is Canadian Pacific Railroad, which has purchased or acquired control of eight airline companies in Canada, and which to-day is gaining wide experience in over-ocean flying by reason of its complete control of servicing and operation of bombers being ferried to England.

There is even much reason to believe that Canadian Pacific Railroad is to-day in the dominant control of British Overseas Airways, and that Montreal will become the centre of British commercial air services when the war is over. The extent to which C.P.R. has forged its way to the top as the largest potential British airline operator has not been thoroughly recognised outside of a small circle associated with C.P.R.'s air service department.

Development of an extensive air service department by C.P.R. is a new phase of the long rivalry between this company and the Government-owned Canadian National Railroad, which owns Trans-Canada Air Lines.

A large number of British Overseas Airways pilots are to-day working for C.P.R.'s trans-Atlantic air service department. So are about 60 U.S. pilots and a few Canadians.

General manager of the air service department is C. H. "Punch" Dickins, perhaps Canada's best known and best liked airline pioneer, who built Canadian Airways into a large organisation.

Canadian Pacific is one of the largest organisations of its kind in the world, with offices in every principal city on the globe and steamship lines reaching into almost every ocean. It plans to supplement its steamship service with long-range airplane routes. It has obtained the franchise for the trans-Atlantic service, and it can offer, via Alaska, the shortest air route from North America to the Orient and Australia.

The railroad now owns or controls the following airlines in Canada:—

Canadian Airways, Ltd., Montreal, Winnipeg, Vancouver
Arrow Airways, Ltd., The Pas, Manitoba.
Dominion Skyways, Ltd., Montreal.
Mackenzie Air Service, Ltd , Edmonton, Alberta.
Prairie Airways, Ltd., Moose Jaw, Sask.
Quebec Airways, Ltd., Montreal.
Starratt Airways and Transportation Ltd., Hudson, Ont.
Yukon Southern Air Transport, Ltd., Edmonton, Alberta.

Only six smaller airlines and the Government's Trans-Canada Air Lines, remain outside the C.P.R. fold.

In acquiring control of individual airline companies C.P.R. has done much to stabilise the costly and competitive "bush country" operations which have been a sore spot in Canada's aviation picture for many years.

Faced with ultimate transcontinental competition unless the Government should force a merger of the two railroad companies (an unlikely prospect), Trans-Canada is busy extending its services to Halifax and preparing to extend its Lethbridge-Edmonton route to White Horse, Yukon Territory, junction point for air traffic in Alaska. The White Horse route will be opened early next year and the radio facilities will be complete some time this year.

For some years the British have called attention to its so-called "Red Route," a proposed air service extending from the British Isles to Canada and westward over the Pacific to Australia The "Red Route" would not touch the United States. But it seems clear that the dominating force in development of such a route will not be London, but Montreal, and the big force in Montreal is C.P.R.

An important factor in the expansion programme is the expected immigration in Canada of ten million people from England and France after the war is over, doubling the country's population. Even in the midst of war, Canada seems more bent on preparing for future prosperity than on an all-out war effort.

C.P.R. is making up for lost time. It had wanted to launch the first Canadian transcontinental route but the Government pushed its own plans and invited C.P.R. to share 50-50 with it in the organisation of Trans-Canada. C.P.R. would not go along on this deal and the Government assumed complete ownership of Trans-Canada through its railroad, Canadian National.

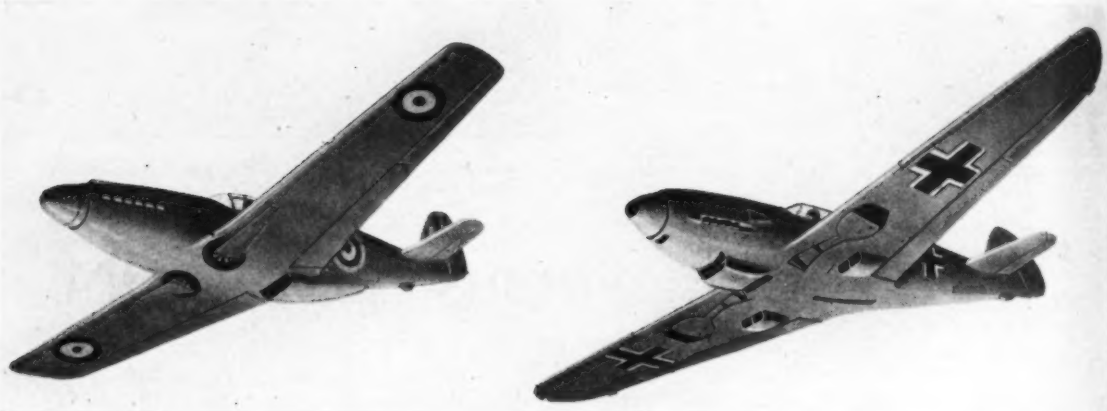
When the war began, C.P.R. made plans to service and operate the bombers being flown to England and to-day it has a large servicing and operations organisation of over 300 persons in Montreal. One cannot be in Montreal long without seeing buses marked "C.P.R. Air Service." Neither can one be in Montreal long without seeing pilots wearing the insignia for "Trans-Atlantic Airways." Although the planes being flown to England are bombers, the ferrying is strictly a commercial operation under control of C.P.R. The R.C.A.F. and R.A.F. have nothing to do with it.

How Canadian air transport expansion will affect the airlines in the U.S. is a speculative matter. Because of its geographical position, Canada has a strategic advantage in over-ocean flying. It is also in the best position insofar as air traffic to Alaska is concerned. To date Trans-Canada Air Lines has not been competitive with U.S. lines to any substantial extent, but Trans-Canada's projected New York-Toronto route should be a busy and profitable one in the future. When Trans-Canada extends to White Horse, Y.T., the Canadian line will have the shortest and most direct route to Alaska from New York City.

Twenty-fifth of the Series

FRIEND or FOE?

New American and German Fighters : The Mustang and the Me 109F



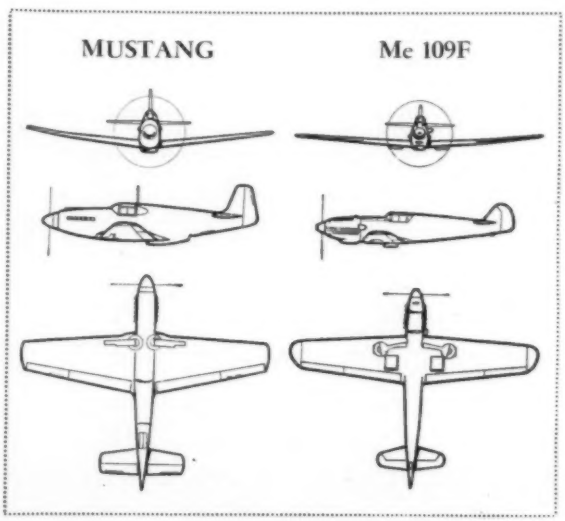
North American Mustang : Low-wing tapers on both edges, curved tips ; dihedral from roots. Long, slim nose, large spinner. Cockpit cover faired smoothly back to tail. Almost rectangular cantilever tailplane, straight taper to both edges of fin and rudder. Wheels retract inwards.

Messerschmitt Me 109F. Low-wing tapers on both edges to rounded tips ; dihedral from roots. Exhaust below centre-line, radiator below nose. Low, streamlined cockpit cover. Cantilever tailplane moderately tapered with rounded tips ; rather small fin and rudder. Tail wheel also retracts.

BY virtue of its in-line Allison engine, which permits a slim, well-streamlined nose, the North American Mustang conforms much more closely to British ideas in the matter of general appearance than do some of its equally valuable fellow-countrymen whose radial "motors" involve a blunt entry and tubby fuselage. In fact, but for the bulge of the radiator air-scoop aft of the trailing-edge, the clean lines of the Mustang fuselage are reminiscent of our own graceful Spitfire. The shape of its wings and tail surfaces, however, will prevent any possible confusion. The former have a straight taper on both edges, the tips being saved from squareness by a curve of moderate radius, and the tailplane is very nearly rectangular. Actually it has a slight taper on its leading-edge and an equally slight radius on the tips, and is set a little forward in relation to the fin and rudder. The latter are fairly large and also have a straight taper (more pronounced on the leading-edge) and a fairly broad, curved apex. The cockpit cover is low and is faired off in a clean, unbroken line right back to the tail, the windscreen being sharply raked. The retractable undercarriage folds inwards, bringing the wheels into recesses in the centre-section.

The new Messerschmitt Me 109F is evoking more interest than any other enemy machine at the present moment, and it is now possible to describe it in some detail (so far as appearance is concerned) since it has not only been seen in action over Great Britain but has also been seen through the gun-sights of one or two Spitfires, with satisfactory results—to the R.A.F. Its chief outward differences from the ordinary Me 109E lie in the wings and tail Rounded tips have been added to the former, thereby increasing their span and also improving their appearance. The new tail-plane, which tapers on both edges to rounded tips, is now of the cantilever type (that of the 109E was strut-braced, it will be remembered) and has been brought down from its raised position on the fin to line up with the upper edge of the fuselage ; it has also been brought forward a little.

The fuselage of the 109F has also been cleaned up to some extent, though the nose, with its rediator below, remains practically the same so far as looks are concerned. The cockpit cover, however, has been lowered and its streamlining improved, while drag has further been decreased by making the tailwheel also retractable. It does not entirely disappear from view, about half its periphery being still visible when in the retracted position. The shape of the fin and rudder would appear to be the same as that of the 109E. Another slight modification, though not one of much importance from the spotting aspect, is the removal of the wireless mast which sprouted from the top of the fuselage on the 109E just behind the cockpit. The aerial on the new Me runs from the tip of the tailplane to the fuselage.



The most important difference between the old 109E and the new 109F, of course, doesn't concern the spotter at all—unless he is in a position to appreciate the improvement in sheer performance! For the much-boosted, super-hotted Mercedes-Benz engine is reported to give it a top speed of 380 m.p.h. at 21,000ft. and a service ceiling of 38,000ft. But even so, it can't always escape from the R.A.F., and, when it fails to do so, its reduced armament of one shell-gun and two machine-guns—all within the nose—finds it at a disadvantage.

Next Week:—Curtiss Cleveland and Fairey Albacore.

SUNRAY FOR WAR WORKERS

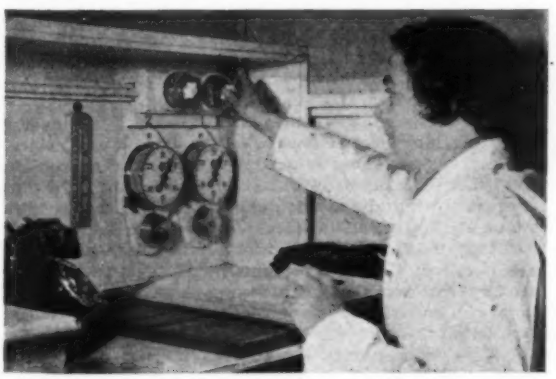
Midland Firm's Successful Experiment Reduces Illness Among Employees

SUCH excellent results in improving the health of their employees and so reducing absence through illness have been obtained at Guy Motors, Ltd. by introducing voluntary sunray treatment during working hours, that the Ministry of Aircraft Production has sought the co-operation of "Flight" in order to bring the matter to the notice of the British aircraft industry.

WHILST it is well known that hospitals have used ultra-violet rays for many years as a cure for various ills with great beneficial results, it may not be generally realised that these rays may be employed as a tonic and a safeguard against illness for a large number of people, especially factory workers who, as result of war-time conditions, have to bear a severe strain.

Employees are called upon to work longer hours; nervous tension is increased; the food may sometimes lack the nutritive value of peacetime and, most important of all, is the restriction of light on account of the black-out. So if the feeling of being jaded and run down is apparent it is not surprising, and yet it is of vital importance to keep fit.

The sunray lamp is of such power that three minutes' treatment is equivalent to 12 hours' sunshine, and the beneficial results due to the ultra-violet rays forming vitamin D in the system tone up the blood-stream, giving an immediate feeling of well-being such as is experienced after long periods spent in the sunshine. These sunbaths increase the resistance to infection, such as the common cold or 'flu, improve muscular energy and result in lessening of fatigue. The majority of footballers and boxers take ultra-violet rays as a regular feature of their professional training. Guy Motors, Ltd., have now had two winters' experience of giving sunray to the staff and employees, and the results obtained are impressive. The sunray treatment is purely voluntary and the applicant must first consult the works doctor who certifies whether he or she is in a fit condition. Actually there are very few cases in which the treatment would be harmful. After a free examination the applicant is ready to take the treatment, which begins with 1½ minutes front and 1½ minutes back. This is continued twice a week for the first eight weeks. Then, after a week's rest, the course is continued. The time is then increased to two minutes back and two minutes front, this being the maximum time allowed. It must be stressed that nothing curative is attempted and the treatment is purely the application of a tonic ray.



In the control room the operator times the length of treatment by special second clocks and rings a bell to start and finish the period and also to tell the patients when to turn round. With such careful handling nobody should ever get "browned off."

A circular rail to keep patients at the regulation distance of 3ft. surrounds the sunray lamp.

The treatment is usually carried out at 3ft. from the lamp, and to guarantee that the patients do not get any closer a guard rail was introduced. One lamp will treat 12 people at the same time, and an endeavour is made always to keep them in the same group. The time at which any particular group should go for treatment is announced five minutes beforehand over the loud speakers and, to avoid the group being held up by late-comers, they are expected to contribute a penny for each minute they are late to the Red Cross box as a penalty. The maximum time that anyone is away from work is ten minutes and, as evidence of the popularity of the sunray, records show that less than one per cent. of the people who have taken the treatment have dropped it. This last winter's records show that of those who attended the treatment only three per cent. were absent through illness, whilst for those who did not attend, the sickness figures amount to ten per cent.—a striking testimony to the health-giving qualities of the installation.

Potted Sunshine

The ray is closely comparable with the ray of the Alpine sun. That is to say, it gives very little heat but penetrates to the blood-stream. In Switzerland heavily tinted glasses have to be worn to protect the eyes, and this is a rule which has to be rigidly observed in the treatment. From the general psychological point of view, sunshine is synonymous with heat and, to give this effect, an infra-red installation subsidiary to the sunray is sometimes used. There are two mercury-vapour quartz tubes of 1,000 watts each in each unit. On switching on the current the ray starts, but does not give full power until two minutes have elapsed, and by that time there is an emission of ozone which is highly beneficial. This has a strong but not unpleasant odour similar to the smell of seaweed on the beach. On damp mornings the ozone may become obnoxious to the patient and, for this reason, two extractor fans have been fitted which also act as air purifiers.

The operator keeps the records of attendance and sees that the heat of the room is kept at 60 deg. F. Mounted above the panel above the desk are two second clocks, one for each cubicle, graduated in minutes and fractions of a minute. A bell informs the operator when to tell the patients either to turn round or to finish their treatment. There is also a bell-push fitted to the cubicle door which is pressed by the last person of the group to enter, and this gives the operator the clue to start the clocks.

BELGIAN ARMY IN BRITAIN

Escape from France : Squadrons to be Re-formed : Their Own Newspaper

By HENRY BAERLEIN

JUST IN CASE : Belgian pupil-pilots at a British training centre are here seen receiving instruction in fixing parachute harness.

WE have so far heard very little of what our Belgian Allies have done and are doing in the air. When the Germans invaded their country and attacked the aerodromes, most of the planes had been removed to the wartime 'dromes, some of which were unknown to the enemy. But those which thus managed to survive for a while were speedily in the thick of the fight, so that by the time that Belgium, overwhelmed by vastly superior numbers, had to capitulate, not more than seven first-line reconnaissance planes were left, while the personnel of 13 squadrons had been despatched to the south of France, where the repair shops were also established.

It was hoped that a new air force could there be built up, but, alas! the collapse of France made this impossible. In fact, the French appeared to single out the Belgians for hostile treatment, being even more vindictive against them than against the Czechs and the Poles, under the pretext that the disasters in Flanders were solely due to the Belgians, whereas—but we will follow the admirable example of our Belgian friends and refrain from controversy, for which the moment is not opportune. Besides, it is probable that General de Gaulle will himself deal, when the time comes, with the past errors of the men of Vichy and their adherents.

Let us therefore only state that when the Belgian planes had been attended to by the French, their magnetos had been removed and an effort was also made to hinder the men themselves from getting away.

Belgium has not yet begun to make her own fighter or bomber planes, those she used being British Hurricanes and Glosters and Italian Fiats. What she herself turned out were training-craft whose quality was so good that some were even sold to other countries. It was these which were taken to the south of France.

Some of their personnel, after numerous adventures, arrived in Britain by way of Bordeaux, Dunkirk or Casablanca in Morocco, some only finding it possible to escape by disguising themselves in Polish overcoats, as these were the least inconvenienced of the Allies. It was quite forgotten that a good many of the Belgians had helped to defend French aerodromes. The Belgian training-craft have been lost, but the pupils in various stages of training are now in British schools. They were opposed to being taken to Canada, where some others of our young Allies are being trained, for they wanted to lose no time before seeking vengeance on the ruthless invaders of their country.

The Belgian psychology is said to be more suited for work in fighter than in bomber planes. A splendid example is that of Lieutenant Philippart, who came to England before Belgium had entered the war, his object being to take the instructor's course at the Central Flying School. He turned his knowledge to excellent account between August 11th and 25th, the day when he was reported missing. During that period he brought down six German planes, including four Messerschmitts, in a single day. Most of the Belgians who are now dispersed among various British squadrons have one or two Germans to their credit; some of them have more.

More to Come

It is probable that the day is not far distant when the Belgians will have their own separate units, for a large number of young men are already with us and many others are expected from all over the world. It is interesting to know that when a Belgian youth goes abroad he has to indicate to the authorities someone who is responsible for letting him hear at once when the country is in need of his services. Those in groups A and B returned when war broke out between France and Germany, those in the next two groups as the danger to Belgium grew more imminent, and those in E, the final group, when it was a matter of general mobilisation. The *lettre de service*, as it is called, of an officer obliges him to return with less delay, as his services are of more value. Naturally, all those who come back are assisted to do so by the Belgian consuls.

A large proportion of the young men seem to prefer to be enrolled in the Air Force, and their wish is granted if they are found to be suitable. At the present moment hundreds of Belgian militarised workers, experts in wireless or electrical equipment, are now employed, and are giving the greatest satisfaction, with the R.A.F. or in aeroplane

A WORD OF WELCOME : A young R.A.F. squadron-leader gives a cheery greeting to Belgian pilots who have just joined his fighter squadron.

BELGIAN ARMY IN BRITAIN

factories. It is hoped that some of them will be able to join the all-Belgian squadrons.

There is now being published by the Belgian troops in this country—whom I recently had the privilege of visiting in one of their camps, where the morale was all that could be desired—a paper called *Vers l'Avenir* ("Towards the Future"), with an identical edition in Flemish, which provides for the further happiness of the troops. In a recent number it referred to the airmen. In Belgium, it reminds us, the *Luftwaffe* started a terrible offensive on August 8th. Few in number, the Belgian pilots took the air with their comrades of the R.A.F., and in that first month of the offensive they shot down 16 German machines. Several of these pilots were killed in action or have been reported missing.

(Above) *AB INITIO:* An R.A.F. instructor gives a group of Belgian pupils a final word before taking the air. The nose of a "Maggie" can be seen in the background.

"QUALITY AND STRENGTH": A picture which not only shows the quality and strength of one of our fighters but also the power of the pilots. The pilots of this squadron have shot down 112 enemy planes.

A young pilot gave the following account of his doings: "After having joined up with the squadron to which I was appointed I had some additional training, particularly with regard to wireless. Then we left for an aerodrome, where we were able to do some useful patrol work. Although I have been in action pretty often I have never yet been able to say for certain that I have shot down one of the enemy, but I am sure that I have damaged some of them. Three times I returned to my base with my plane riddled with bullet holes. A few days ago I had a fight with a Messerschmitt 109, and my Hurricane was completely wrecked, half of the left wing being shot away, the controls cut and the main fuel tank demolished. I was smothered in petrol from head to foot. Bullets were pouring in and I was nearly blinded. Fortunately the machine did not catch fire before I had jumped out with my parachute, and none of the bullets hit me, although my trousers were pierced in several places."

Vers l'Avenir does not confine itself to serious military and political subjects, nor to the domestic details of the troops, for it does not disdain humour in slogans and little stories.

"Belgian soldiers in England," it says, "are a real band of brothers, and there are still a few vacancies." It also says that those who cannot make up their mind to join them had better stay at home and come in after the victory. Then there is the story of a new and secret Italian plane which moves very silently and can traverse thousands of miles in the air. Its purpose is to drop parachutists behind the enemy's lines, and the crew consists of a pilot, an observer, a gunner and 20 others, of whom one is the parachutist and the duty of the remaining 19 is to push him out.

One of the officers I met in their camp told me that when he arrived in Madrid he was warned by the proprietor of his hotel that the German Gestapo, who are present in Spain in large numbers, of course in mufti, working by the side of the local police, were after him. The proprietor helped him to get an aeroplane for Lisbon, and although it was the grandmother of all planes, and its passage over the mountains at a height of 4,500 metres made the occupants rather apprehensive, it reached Lisbon with no untoward incident. The proprietor had acted in this kindly fashion because, during the Spanish civil war, his two children had been given hospitality in Belgium

DOTS AND DASHES: Here we see a class of Belgian airmen practising Morse; their instructor taps out a message on the Morse key for them to take down.

SOLDIERS AND THEIR AIRMEN

The Need to Learn from Past Mistakes

By MAJOR F. A. de V. ROBERTSON, V.D.

THE PRIME MINISTER, in his great speech on June 10 in the House of Commons, dealt satisfactorily with the discontent expressed in many quarters over the fight in Crete. The public had begun to exclaim that here was a fourth campaign in which British and Allied troops had been defeated by German superiority in the air. The same thing had happened in Norway, in France, and in Greece, and the public was beginning to feel seriously perturbed about it. The Battle of Britain had proved that we could best the Germans in the air; were our armies never to profit by that ability? The R.A.F. could hold its own, and a bit more, against the Germans; the Fleet could carry on its work in spite of all the worst that the *Luftwaffe* might contrive; was it only when the Army was the protagonist that air power was to turn the scales against us?

This chain of argument overlooked the various campaigns in Africa, in each one of which the Air Forces of the Empire had done everything which could be asked of them. The one British reverse in Africa, when the Germans recovered Cyrenaica, was due to the enemy's superiority on the ground, and not in the air. In the Iraqi revolt and in the advance into Syria the R.A.F. has done its full share.

None the less, the campaigns in Greece and Crete made unpleasant sequels to those in Norway and France, and it is not surprising that the public mind was disturbed. An assurance was wanted that there should be no more cases in which Stukas should bomb our men into defeat. The Navy, of course, is properly silent, but one can imagine that our sailors must be thoroughly tired of evacuating British troops from bombed beaches, and losing ships in the process, because the Army had tried to fight without one indispensable weapon of modern warfare. Our soldiers naturally had even stronger reasons for feeling disgusted.

In his speech in Parliament Mr. Churchill dealt rather summarily with the campaign in Greece. It was not a purely British affair, and the fortunes and misfortunes of our Greek and Yugoslav allies affected the result. But he dispelled the most serious misgivings about the fight in Crete. There had been no lack of foresight. We had not in the Empire enough A.A. guns to spare for the defence of the aerodromes we had occupied in the island, and so nobody could be blamed for having neglected that defence. Therefore it became necessary to evacuate our fighter squadrons, and General Freyburg recommended that this step should be taken. The Generals decided to fight in Crete with the full knowledge that they would not have adequate support in the air.

The Public Aroused

It has taken the tragedies of Greece and Crete to wake the British public up to the fact that armies cannot hope to win campaigns unless they can obtain the services of sufficient aircraft, but the worst case really was the campaign in France. When that is mentioned, the word "Dunkerque" comes to the mind of the public, and men exclaim that there the R.A.F. did grand work. The R.A.F. certainly did, during the actual evacuation—grand, that is to say, in the sense of being successful. But during the Battle of France all was not well with the relations of the Army and the Air Force. The squadrons that were in France did all that mortal man could do, but the organisation was at fault. There were not enough squadrons in France, not enough bombers, and particularly not enough fighters. No wonder the Army felt aggrieved! No wonder a demand arose that the Army must have its own air arm! To avert this dread catastrophe, the Air Ministry formed what is called the Army Co-operation Command.

The choice of name for the new formation was not particularly judicious. Literally it expresses the object of the Command, but the term has certain associations which it would have been wiser to shed. For many years past the R.A.F. has included a number of Army Co-operation Squadrons, and the use of the same term suggests that the new Command will deal only with squadrons of that description. Actually it was the intention that the Command should go much further than that. One is rather inclined to wonder whether this term "Army Co-operation" has not in the past misled the man in the Cabinet as well as the man in the street.

A little retrospection is desirable. For most of the inter-war years our fighting Services were governed by the two principles of disarmament and economy. When the Air Estimates were drawn up each year, they were, of course, scrutinised by the Treasury. Any new expenditure, such as the formation of a new R.A.F squadron, had to be sanctioned by the Cabinet—and the Cabinet's knowledge of air matters was probably summed up in the sapient prophecy of Mr. (now Lord) Baldwin, "The bomber will always get through." One can hardly avoid the suspicion that when the Air Estimates were scrutinised by Cabinet and Treasury, the examiners saw that so many squadrons were devoted to "Army Co-operation," and felt that every need of the War Office was thereby met.

Loans to the Army

In actual fact those squadrons were only trained and equipped for short tactical reconnaissance up to some 50 miles behind the enemy's front line, and to spot for the artillery. The successive types of machine which they flew—the Bristol Fighter, the Atlas, the Audax, the Hector, and the Lysander—were suited to those tasks and to nothing beyond them. Yet the Army needed other help from the air, and the War Office and the Air Ministry both recognised the needs. One could not think of the last war without recognising them. For the first three years of that war the R.F.C. was but a corps of the Army, and in the last seven months the greater part of the R.A.F. was engaged in work for the Army.

Accordingly, when large-scale manœuvres were held round Andover in 1925, the Air Ministry lent so many squadrons of fighters and of day-bombers to the War Office. Actually two squadrons of each class were supplied to each side. It was explained many times in words and in print that when the next war came the Air Ministry would supply the Army with fighters and bombers when it went overseas. Sometimes it was cautiously added that to decide on the numbers of such squadrons would be the responsibility of the Cabinet. At a later stage some squadrons of Blenheims were put through a course of training in strategical reconnaissance for the Army.

From 1925 up to 1937 it was obvious to any careful student of military and air matters that the Air Ministry had barely enough (if enough, in any sense of the word) fighter squadrons to protect Great Britain, and how any could be spared to accompany an expeditionary force overseas was a problem. It seemed obvious that the Army would go short, and that is what happened. When the B.E.F. crossed to France in 1939 its Air Component included four fighter squadrons, Nos. 85, 87, 607 and 617. When the Germans advanced, two more fighter squadrons, Nos. 3 and 79, were brought over to reinforce. The Advanced Air Striking Force was not supposed to work for the Army, but when the Battle of France (and of the Low Countries) began it was obliged to do so. Originally it had two fighter squadrons, Nos. 1 and 73, which were afterwards reinforced by Nos. 17, 242 and 501. Every witness agrees that these eleven squadrons were terribly overworked in striving to cope with the swarms of German aircraft. The original allocation of four fighter squadrons to one force and two to the other was farcical.

The Air Ministry, of course, has a perfectly sound

explanation to offer. It would have preferred at all times to have more squadrons, fighters and others, too, than it had been allowed to raise, and it was not its fault that numbers were low in 1939. It had done the best it could with the force available, always bearing in mind that the safety of Great Britain must not be sacrificed. To this line of argument the only exception which can be taken is that in the past the Air Ministry had been slow to recognise the necessity of a high proportion of fighters in its total strength. Its policy had been to raise two bomber squadrons for every one fighter squadron. As the air defence of Great Britain is the first duty of the Air Ministry (in fact, the strongest and most incontrovertible reason for having an Air Ministry and a separate Air Force) that policy was of doubtful wisdom. However, in the days when the Fox and the Hart in turn were faster than the best British fighters, there was some excuse for looking on the latter as poor investments.

The root cause of our aerial shortcomings was a faulty system of budgeting. Even in the days of economy and disarmament the needs of the Army and the needs of our independent air power (in both defence and attack) ought to have been separately computed. If the Treasury allowed the Air Force only *x* bombers and *y* fighters, these ought not to have been reckoned as including the numbers to be lent to the Army. Both *x* and *y* were needed for our air campaign. The Army should have been allowed *z* fighters and *a* bombers in addition.

Weak War Office Position

The War Office was not in a strong position for insisting that its requirements should be met, because it did not pay for its air squadrons. The Admiralty was wiser and gave an appropriation-in-aid to the Air Estimates to cover the cost of the Fleet Air Arm. The War Office seems to have accepted silently what the Air Ministry offered it. The Cabinet, as suggested above, possibly thought that the term "Army Co-operation" covered all needs.

Do we British ever learn from our mistakes? It seems as if efforts are being made to provide the Army with air support in the future. The first step was the formation of the Army Co-operation Command. The idea at the basis of this body is that the Air Force shall really and adequately cater for the needs of the Army in bombers and fighters as well as in squadrons for tactical reconnaissance, but that on occasions like the present when the bulk of the Army is in Great Britain, the squadrons concerned shall be available for ordinary Air Force work.

The case has been well put and on the face of it is attractive; but still doubts arise as to whether it will really meet the needs and will guard against dangers in the future similar to those which have cost us dear in the past. It is doubtful whether the Prime Minister is satisfied with the present expedient. In his speech on June 10 he said:

"Last year when we were considering our affairs the great need was to multiply fighters and bombers. It became an enormously important matter. Nevertheless, proportions of the army co-operation squadrons were associated with the military forces, but not on the scale which was desirable or to the extent which was desirable. *It is of the utmost consequence that every division*, especially every armoured division, should have a chance to live its daily life and training in a close and precise relationship with a particular number of aircraft that it knows and that it can call up at will and need, and under its own command, for the purposes of everything that is a tactical operation.

"But it was not possible last year to provide it on a large scale without trenching on other domains which were more vital to our safety. But it is the intention to go forward upon that path immediately and to provide the Army with a *considerably larger number of aeroplanes suited entirely to the work they have to do and, above all, to the development* of that wireless connection between the ground forces and the air and the military which the Germans have carried to such an extraordinary point of perfection."

Looking to the Future

This seems to mean that Mr. Churchill has a coming change in mind, but what it is he has not made clear. His use of the term "army co-operation" leaves one in doubt as to whether he merely means tactical reconnaissance squadrons or all the descriptions of aircraft which an army needs. On the whole, he seems to mean the latter. Otherwise it would have been superfluous for him to stress the desirability of army divisions and aircraft living their daily lives together and training together, and the aircraft being under divisional command—for those words merely describe the position of the Lysander squadrons for years past.

We all know that the Army is to be provided with aircraft capable of dive-bombing. It may be that the Prime Minister intends these, and perhaps other classes of squadrons too, to be under the command of divisional commanders and to live permanently with the troops. That would, in effect, be an army air arm, even if the squadrons continued to be part of the Air Force.

The Air Ministry contention, that it would be wasteful to keep squadrons aground when the Army was not fighting but when there was air work to be done, is just. But the principle might be established that on such occasions the War Office lends the squadrons to the Air Ministry—not that when a B.E.F. goes overseas the Air Ministry lends squadrons to the War Office. That plan has been tried, and it has failed.

We must look to the future as well. When the present war is over there will certainly be reductions in our armed forces. There will be another call for economy. However we economise it is essential that we budget for army fighters and army bombers as additional to, and not part of, the allotted strength of the Bomber and Fighter Commands.

Canadian Squadron's Anniversary

WITH more than 50 enemy machines to its credit during the first year of its operation in this country, No. 1 Royal Canadian Air Force Fighter Squadron has just celebrated the anniversary of its arrival in Britain.

Although the squadron actually landed here last June, it did not go into action with its own Canadian-built Hurricanes until late in August—during the Battle of Britain—but its leader, Sqn. Ldr. E. A. McNab, had seized a chance to open the score just previously when, flying with an R.A.F. squadron to get battle experience, he attacked and shot down a Dornier. This was the first enemy aircraft to be destroyed by the R.C.A.F. Shortly afterwards, however, the squadron registered its first victory as a unit by bringing down two more Dornier bombers. Then, on September 15th last, the day when no fewer than 185 German machines were brought down, No. 1 R.C.A.F. Fighter Squadron accounted for 14 raiders—a highly creditable "bag" for any single squadron.

Sqn. Ldr. McNab said afterwards that he estimated there were probably 1,000 or more aircraft in the sky altogether, just south of London, on that memorable day.

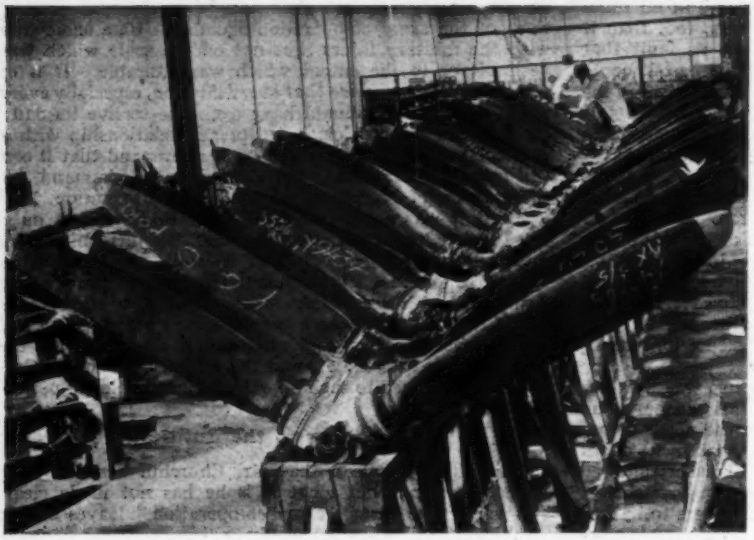
More Aircraft from U.S.A.

DEFENCE officials in America expect that within the next ten weeks the annual rate of aircraft production, which is steadily rising, will reach a total of something in the region of 30,000 machines, according to a recent message from the *Times* correspondent in New York.

The present rate of production of military types is about 1,500 a month, but orders to the value of $5,000,000,000 are now on the books of the various aircraft firms, motor manufacturing companies and other industries in America now turning out aeroplanes, and there is every possibility that this figure will soon be doubled.

In approximately a year's time no fewer than 41,000 aircraft already on order will have been delivered, and of these Great Britain and Allied Governments will have 16,000, the remaining 25,000 going to the U.S. Army and Navy.

These will be supplemented by orders for a further 25,000 aircraft, of which Great Britain will receive approximately one-half. Included in this additional batch of orders is one for 3,600 bombers, but the actual proportion of bombers to fighters and other military and naval types is not stated.



SAVING THE TAXPAYER'S MONEY. Many are the Rotol airscrews which, damaged in service, are made as good as new by straightening metal blades and replacing wooden ones. The hub itself rarely suffers.

Resignation

MR. J. McEWAN KING, for some time managing director of Aeroplastics, Ltd., has now resigned this position and is to form the King Aircraft Corporation, whose activities will include the manufacture of a new pilot's seat of his own design for long-range bombers.

Mr. King, who has been inactive with Aeroplastics since January last, no longer has any connection with this company.

Dick Wrightson Reported Missing

CIVIL aviation will have lost a well-known and popular member if the death of Lt. Richard Verney Wrightson, R.N.V.R. (Fleet Air Arm) now reported missing, believed killed, is subsequently confirmed.

Dick Wrightson, an able pilot, started an air freight service at Heston nearly ten years ago and was as well liked as he was energetic in his various activities in the world of commercial flying.

He joined the Fleet Air Arm at the outbreak of war and had only recently been promoted.

Sir Charles Craven Returns

CMDR. SIR CHARLES CRAVEN, chairman and managing director of Vickers-Armstrongs, Ltd., is to return to the Ministry of Aircraft Production in the newly created post of Controller.

It will be remembered that Sir Charles was appointed chairman of the Air Supply Board in May, 1940, and was Industrial Advisor on the Air Council to the then Minister of Aircraft Production, Lord Beaverbrook. He relinquished his duties at Millbank, however, in November last, and resumed his post as chairman and managing director of Vickers-Armstrongs, Ltd., who have now agreed to release him again at the request of the Prime Minister and the present Minister of Aircraft Production, Col. Moore-Brabazon.

Sir Charles will now be responsible to the Minister for all matters connected with production.

North American Aviation

AT the factory of North American Aviation Inc., at Inglewood, California, there are 11,237 employees. Floor space of the factory is 1,054,000 sq. ft. It was at this factory that the recent strike was broken by the call-out of the troops by President Roosevelt. The company broke an American record when in March it delivered its 1,000th Harvard trainer to Britain. This is the first time that a single American company has reached this figure in deliveries of a single type to a single customer.

Douglas DC-4 Bomber

THE Office of Production Management in U.S.A. announces that the Lockheed, Vega and Douglas companies will co-operate in the production of a bomber version of the Douglas DC-4 airliner.

All Safe and Well

NEWS has reached British Overseas Airways that their staff at Baghdad and Habbaniyeh are all safe and well after the recent disturbances in Iraq, although some of them were held prisoner until British control was regained.

The regional director of the Iraq and Persian Gulf Region, R. Marais, and the regional accountant, J. F. Soler, were in the Baghdad headquarters throughout the revolt, but the traffic superintendent, A. Thomson, the station superintendent at Habbaniyeh, A. E. Watts, the traffic assistant, P. C. M. Shillitoe, the supervisory coxswain, C. A. Lacey, the coxswain, H. Dunn, and the resident stewards, J. W. J. Hibbs and R. Thomas, who were all in the British Airways resthouse outside the R.A.F. cantonment, were taken prisoner and, though they themselves were not harmed, the Iraquis pillaged the resthouse, which is actually a large modern hotel.

During the period of the revolt the Cairo-Basra section was overflown by aircraft which had been specially fitted with long-range tanks, but operations by way of Habbaniyeh will soon be resumed.

HERE AND THERE

R.I.P.

WE regret to announce the death of Mr. Swain, the chief steward at Calshot Mess, who will be remembered both by members of the Services and by members of the Royal Aero Club who visited Calshot for the Schneider Trophy races.

Mr. Swain ruled his domain with the firmness of an autocrat and was a most competent steward. His death, which occurred suddenly on June 15th, deprives Calshot of a genuine and thoroughly likeable personality.

To Control American Aircraft Supply

MR. WALLACE CHARLES DEVEREUX, F.R.A.S., who has 26 years' experience in the aircraft industry, has been appointed Controller of North American aircraft supply in the Ministry of Aircraft Production; the appointment has just been announced by Lt.-Col. Moore-Brabazon, Minister of Aircraft Production.

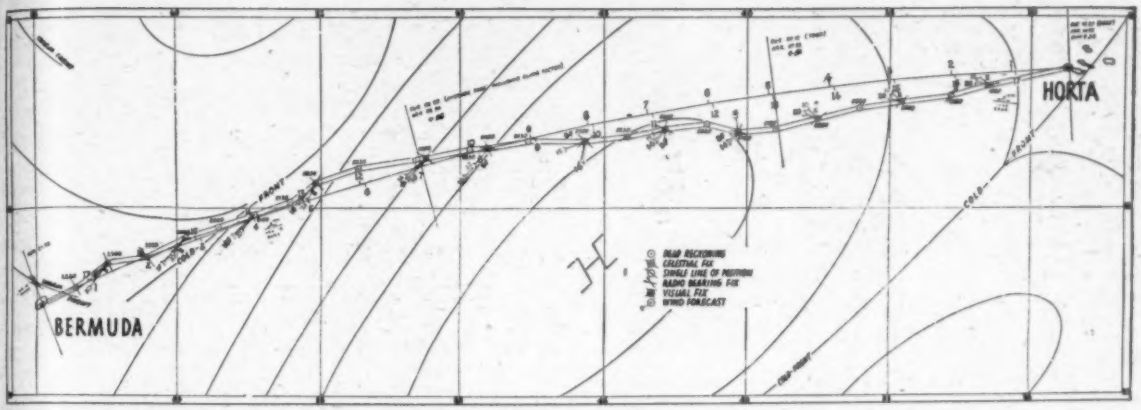
Mr. Devereux, who was Superintendent of National Aircraft Factory No. 1 during the last war, and is a trained aeronautical engineer, is chairman of International Alloys, Ltd., managing director of High Duty Alloys, Ltd., and a director of Reynolds Rolling Mills.

A.T.A Ferry Pilots

THOUGH Air Transport Auxiliary has a large number of pilots on its staff, there is still a steady small intake, and applications are invited from people who have had solo flying experience and have held an A licence. The kind of work which A.T.A. does was described in *Flight* of June 12th, page 405. It is not easy work but a very thorough training is given by the A.T.A. School, and the pilot's tasks are graduated through the easy flying up to the more difficult. Rates of pay were given in our issue of March 20th, page 223, and vary from £285 for a cadet on probation up to £590 for a captain. To this is added a subsistence allowance of £7 10s. per month for the cadet and £15 for the captain. Those who are interested and have about 50 hours' solo flying should apply to Air Transport Auxiliary, Ministry of Aircraft Production, London, S.W.1.

OCEAN AIR TRANSPORT

Mr. J. T. Trippe's Lecture to R.Ae.S. : Hint at Possible Return to Landplanes on Transatlantic Service



A flight forecast chart as prepared for captains of transatlantic commercial aircraft. The path to be followed is plotted on information received from the weather service reports and is issued in conjunction with a three-dimensional weather chart which provides a visual description of conditions to be expected such as clouds, rain, fog and icing areas.

A DEFINITE hint at the possibility of a change-over from flying-boats to landplanes for transatlantic service, foreshadowed in a *Flight* leading article some time ago, was given by Mr. J. T. Trippe, President of Pan American Airways, when he gave the 29th Wilbur Wright Memorial Lecture before the Royal Aeronautical Society during his recent brief visit to London. Mr. Trippe flew here in order to discuss with the Air Ministry and British Overseas Airways certain important developments in the transatlantic air services.

The subject of the lecture was "Ocean Air Transport," and, after reviewing the progress made from their pioneer 90-mile service in 1927, with a Fokker F-7, across the Straits of Florida between Key West and Havana, Cuba, to the present-day transatlantic service, Mr. Trippe referred to considerations which had influenced the design of new aircraft now on order, certain aspects of which pointed towards a return to the use of landplanes.

"Each flight, I can safely say, has made some contribution to our technical knowledge of the Atlantic and its exacting conditions in this first two years of service," said Mr. Trippe.

New Type of Clipper

"Hardly had our initial schedules been instituted with the 84,000-lb. Boeing B-314 Clippers when specifications were released to manufacturers inviting their bids on the design and development of a new type of Clipper which our experience indicated to be the required next step in trans-oceanic development. Construction contracts for such aircraft were actually let in June, 1940, with the first deliveries scheduled for early 1942. I regret that I am not yet at liberty to disclose, here or at home, the technical details of these aircraft. I can, however, cite certain of the immediate and specific problems encountered in our transatlantic operation, the presence of which we had in mind in their procurement."

These were:—(1) Sea-swells in the harbour of Horta; (2) the consistently high velocity of westerly winds, particularly during the winter months; and (3) the recurring ice problem on the North Atlantic coast which points to the advantages of landplane operations which would also admit of direct service between metropolitan airports on both sides of the Atlantic.

Anyone who imagined that operating a transatlantic air service was a comparatively simple undertaking would have been quickly disillusioned on hearing, during the course of this lecture, of the very complex and comprehensive organisation it entails.

Mr. Trippe sketched the steady development in aircraft design, maintenance and operational methods which went on side-by-side with the advance in such things as the adaption of celestial navigation to air transport purposes, the increase in range of radio-direction finders, and the steady expansion of their weather service organisation.

Howgozit?

Every conceivable factor is taken into account in the "flight plan" of a transatlantic service. Weather conditions are naturally given due attention and we reproduce here a typical flight chart on which the course has been worked out in relation to meteorological considerations. Then, to provide a further safeguard, a close check is kept during the flight, the purpose being to supply the crew aloft and the "flight watch" ashore with a continuous flow of information as to the fuel reserve and the fuel required to complete the flight or return to the starting point. This is presented on a graph, known with characteristic American aptness as the "Howgozit Curve" (actually it comprises a set of five curves) and was developed by Pan American ocean captains under the leadership of Capt. Harold Gray, now Chief Pilot of the Atlantic Division. Incidentally, each trans-ocean Clipper of the Boeing B-314 type is required to start any flight of 2,000 miles or more with a reserve of fuel over and above the estimated consumption sufficient for an additional 4½ hours' flying. This is a safety margin to allow for any circumstances which may not have revealed themselves during pre-flight study of conditions. The total tank capacity of the Boeings is 5,400 gallons. Flight-deck routine is strictly conducted under a standard long-range cruising formula, the object of which is maximum efficiency in terms of fuel economy. This means that, as the weight of fuel carried decreases, the power output is reduced in order to maintain the wing's most efficient angle of attack.

On one particular flight to Horta, which Mr. Trippe gave as a typical example, the log showed that the speed of the engines was successively cut to 1,200 r.p.m.

The Miles Master II, seen from a somewhat unusual angle which barely does the machine justice.

THE MERCURIAL MASTER

Second Edition of a Famous Trainer

SOME two years ago the Miles Master I, with Rolls-Royce Kestrel XXX engine, began to go into service as an intermediate trainer for the R.A.F. In due course this machine came to be manufactured by Phillips & Powis, Ltd., on the moving track system, and it has been coming off the track steadily for well over a year. A variant has now been introduced, which is fitted with the Bristol Mercury engine. The speed has not been greatly affected by the change, being in excess of 250 m.p.h., and the gross weight remains the same at 5,500 lb.

It may be recollected that the prototype Miles Kestrel Trainer, from which the Master I was developed, had a Rolls-Royce Kestrel XVI of some 750 h.p., and a speed of 295 m.p.h. The Kestrel XXX is a de-rated type of 550 b.h.p. For training purposes this was deemed adequate, and one result was longer periods between overhauls.

The original intention with the Master I was to provide a trainer in which all the features and controls of the single-engined fighter were reproduced, including retractable undercarriage, liquid cooling, variable-pitch airscrew, flaps, etc. As the machine is very suitable for general training, and there are many single-engined military types with air-cooled engines in use in the R.A.F. and Fleet Air Arm, the decision to bring out a version with air-cooled engine is a logical one. The Mercury engine in the Master II drives a Rotol constant-speed airscrew, so that in this respect also the new machine is thoroughly up-to-date. Pilots trained on it will become familiar with the operation and use of this type of airscrew, which is coming more and more into general use, and will learn the proper use of the cowling gills on the Mercury engine. As the photographs show, the substitution of a radial engine has not detracted from the appearance of the Master. In fact, from certain points of view the new machine looks more attractive than the original.

In view of the fact that so many American types are coming into service with the R.A.F. it would seem logical to introduce a third version, with one of the American air-cooled radial engines. Although all radials are fundamentally similar in their operation, there are always smaller differences which have to be known and understood if the pilot is to get the best results out of his engine.

The Master II has a wing span of 39ft. and a wing area of 217 sq. ft. At 5,500 lb. gross weight the wing loading is just over 25 lb./sq. ft., which is heavy enough to simulate the characteristics of operational types of aircraft.

The introduction of a Bristol Mercury engine in the Master II has not greatly changed the appearance. In other respects the machine remains unaltered.

Service Aviation

Air Chief Marshal Sir Philip Joubert de la Ferté, K.C.B., C.M.G., D.S.O., now A.O.C. in C. Coastal Command.

Aerodrome Defence

THE responsibility for the military defence of R.A.F. aerodromes was clearly stated by Lord Moyne in the House of Lords during the recent debate on the battle for Crete. Lord Moyne said:

"The Army, from the early stages of the war, was responsible for the very substantial military defences of the vulnerable aerodromes. There was now to be added to this an R.A.F. defence force for the local defence of certain particular aerodromes. This would be supplementary to the Army defences, and backed up by the Army resources in case of need. New aerodromes were being developed so that these resources had all the time to be stretched and increased. That was why these recruiting appeals had been made. It would be wrong to suggest that these new steps were an admission of past neglect. In all these matters we were making steady advance as resources allowed, and the foundation of static defence was and would remain primarily the responsibility of the Army."

Awards

THE KING has been graciously pleased to approve the following awards in recognition of gallantry and devotion to duty in the execution of air operations:—

DISTINGUISHED SERVICE ORDER

Wing Cdr. EDWARD COLLIS DE VIRAC LART.—Posthumous award—with effect from 31st July, 1940.

DISTINGUISHED FLYING CROSS

Act. Sqn. Ldr. JOHN BAPTIST KEAST (since posted as missing).

Flt. Lt. A. M. G. LYWOOD, No. 250 Squadron.

F/O. P. E. A. LOAT, No. 148 Squadron.

F/O. S. W. F. PALMER, R.A.F.V.R., No. 8 Sqd.

DISTINGUISHED FLYING MEDAL

Sgt. G. W. BAXTER, No. 250 Squadron.

Sgt. H. H. BROWN, R.A.F.V.R., No. 148 Squadron.

Sgt. J. H. SPIKES, R.A.F.V.R., No. 69 Squadron.

Roll of Honour

Air Casualty Communique No. 71

THE Air Ministry regrets to announce the following casualties on various dates. The next of kin have been informed.

KILLED IN ACTION (WHILE FLYING IN OPERATIONS AGAINST THE ENEMY).—L.A/C. H. A. Cottam; Sgt. E. C. Cruttenden; P/O. N. F. Dawson; Sgt. J. L. Elwell; P/O. K. B. Fuller; Sgt. J. S. Hesk; P/O. H. H. Hirst, P/O. D. W. Hockney; L.A/C. L. R. Holmes; Sgt. A. G. Knight; F/O. J. G. K. Long; Sgt. K. B. Martin; Sgt. R. J. Parrott; Sgt. W. Peebles; Sgt. C. D. Ripsher; Sgt. C. P. Robertson. L.A/C. G. I. Robertson; Sgt. S. I. Sander; L.A/C. E. S. Shelton; Sgt. H. W. Taylor; Sgt. N. F. Taylor; F/O. P. C. Thomas; F/O. D. H. Walsh; Sgt. L. White; Sgt. E. H. Wilson; Sgt. E. V. Wynne.

PREVIOUSLY REPORTED MISSING, BELIEVED KILLED IN ACTION, NOW PRESUMED KILLED IN ACTION.—Sgt. F. H. Abbott; Sgt. V. Arrowsmith; Sgt. J. B. Barclay; Sgt. G. N. Brooks; Sgt. D. A. Cruickshank; Sgt. P. M. Davidson; Sgt. G. H. Edworthy; Act. Sqn. Ldr. M. F. Hendry; Sgt. V. J. Morgan; Sgt. R. R. J. Nute; Sgt. H. C. Orchard, Sgt. C. Reardon; Sgt. J. P. Rylands; Sgt. V. H. Saillen; P/O. P. G. Tunstall; P/O. J. H. Wybrants.

PREVIOUSLY REPORTED MISSING, NOW PRESUMED KILLED IN ACTION.—Sgt. W. N. Abbott; P/O. P. A. Baillon; Sgt. E. A. Barker; Sgt. T. E. Barnes, A.F.M.; Sgt. H. J. R. Barrow; Sgt. E. J. Bayliss; Sgt. A. W. R. Beeden; Sgt. H. Bennett; P/O. R. H. M. Bennett; Sgt. V. Beverley; Sgt. W. H. Bolton; Sgt. G. R. Brocklehurst; Sgt. J. H. Brown; P/O. D. O. M. Browne; Sgt. A. St. J. Bunker, P/O. A. B. Carrick; F/O. R. H. Clarke, P/O. D. G. Cobden; P/O. G. A. Cockayne; P/O. D. S. Cox, Sgt. J. Cutler; F/O. B. W. J. D'Arcy-Irvine; Sgt. K. Mc.N. Davidson; P/O. T. Dawson; Flt. Lt. J. W. K. Davies, D.F.C.; Sgt. E. A. Dean; Sgt. C. Dowsett; Sgt. J. D. Dowsett; Sgt. D. W. Elcome; Sgt. J. Falconer; P/O. N. B. Fawcett; Sgt. T. A. Ferris; P/O. J. J. Finlay; P/O. G. H. M. Ford; Flt. Lt. J. W. S. Fowler; Sgt. J. Fraser; F/O. R. G. Furness; Sgt. L. J. Furze; Flt. Sgt. V. W. Gadsdon; F/O. R. W. Gair; P/O. A. H. H. Garrad; P/O. J. A. Gilbert; P/O. J. H. H. Gladdis, Sgt. L. G. Goldie; P/O. M. D. Green; Sgt. R. S. K. Hamilton; Sgt. E. G. Harding, Sgt. H. H. Harrison; P/O. N. Hart; Sgt. R. L. Hayes; Sgt. D. T. Heard; Sgt. R. M. Heyworth; Sgt. T. A. Hughes; P/O. A. E. Hyde-Parker; Sgt. J. Kelly; Flt. Lt. M. T. Kirkwood; Sgt. J. R. G. Lamb; Sgt. F. J. Leonhardt; P/O. M. C. A. Linden; Sgt. R. Little; Sgt. J. McGhie; Sgt. M. MacKenzie; P/O. D. MacLean; F/O. A. MacRury; P/O. P. R. Mildren; Flt. Lt. N. B. Mole; Sgt. R. McG. Morrison; Sgt. J. I. Moyes; Sgt. H. F. J. Moynham; Sqn. Ldr. J. H. R. Oldfield; P/O. K. V. Palmer; P/O. J. S. Pay; Sgt. W. R. Pope; Sgt. E. A. G. Randa; P/O. M. H. G. Rawlinson; Sgt. R. W. Reader, Sgt. M. P. Reynolds; F/O. C. S. Robson; Flt. Lt. K. H. Savage; Sgt. H. V. Seed, Sgt. H. S. seward; Sgt. A. T. Shackleford, Sgt. J. E. R. Sharvin, Sgt. J. F. J. Sheridan; Sgt. K. Shimmells; Sgt. B. Shuttleworth; Act. Sgt. H. K. Smart; Sgt. D. A. J. Smith; Sgt. P. T. H. Smith; Sgt. N. J. Stocks; Sgt. C. E. Thrower; P/O. D. R. Tuppen, Sgt. W. L. T. Walker; Sgt. D. A. Walters, Sgt. J. B. Watt; Sgt. J. R. H. Webster; P/O. A. N. C. Weir, D.F.C.; Sgt. D. E. Westwood; Sgt. W. White; Sgt. G. Wood; Sgt. M. E. L. Wood; Sgt. E. E. Wright; Sgt. P. H. Yorath; Sgt. R. G. Young.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED IN ACTION.—Sgt. C. M. Thompson.

WOUNDED OR INJURED IN ACTION.—Act. Flt. Lt. G. E. Goode; Sgt. P. McD. Grant; P/O. J. Irwin; Sgt. A. L. Loudon; Sgt. G. S. Rowland.

DIED OF WOUNDS OR INJURIES RECEIVED IN ACTION.—Sgt. J. O. R. Collins; P/O. W. McG. Cooper, Sgt. J. Marsden; Sgt. D. W. Robinson; F/O. R. J. Starrett; Sgt. D. R. Tillen; Sgt. A. A. Wood.

PREVIOUSLY REPORTED PRISONER OF WAR, NOW REPORTED DIED OF WOUNDS OR INJURIES RECEIVED IN ACTION.—Sgt. G. H. Hatch.

MISSING, BELIEVED KILLED IN ACTION.—P/O. J. P. L. Branson; P/O. R. A. Childs; P/O. J. Cutmore; Sgt. L. L. Evered; Sgt. W. V. Fillingham; Sgt. N. H. Gear, D.F.M.; Act. Wing Cdr. W. M. Graham; Sgt. K. G. Gresty; Sgt. W. C. Hamilton; F/O. A. D. S. Hicks; F/O. G. J. Lynes, D.F.C.; Sgt. J. M. McL. MacDonald; Sgt. R. F. Mayers; P/O. J. F. T. Ogilvie; Sgt. J. F. O'Hare; Sgt. H. E. Preston, D.F.M.; F/O. J. C. E. Robinson; Sgt. D. F. Ross; Sgt. L. G. Sarjeant; Sgt. R. T. Selley; Sgt. S. A. Taylor; P/O. R. H. Vaughan, F/O. F. S. W. Webb.

MISSING.—Sgt. E. P. Acton; P/O. G. R. N. Adams; Sgt. L. J. Adey; Sgt. P. Addison; F/O. N. Le C. Agazarian; Sgt. D. W. Arnold; Sgt. H. L. Bailey; P/O. S. L. Bailey; Sgt. W. H. Balch; P/O. J. A. Basham; Sgt. G. A. Bennetts; Sgt. N. O. Bennett; Sgt. W. Beverley; Sgt. R. C. H. Blatchford; W/O. C. Bond; Sgt. J. D. Bramhall; F/O. H. F. D. Breese, W/O. A. Bruines; Sgt. H. Burton; Sgt. W. G. Busby; A/C.2 C. E. Butler; Sgt. O. W. Carter; Sgt. R. W. Channer; Wing. Cdr. A. L. Christian; Sgt. G. A. Cole; F/O. F. G. Collins; Sgt. R. H. C. Crook; Sgt. R. E. Davis; Sgt. M. S. Dewing; Sgt. L. S. Dilnutt, D.F.M.; Sgt. H. T. H. Downes; Sgt. C. E. A. Dunlop, D.F.M.; Sgt. P. W. Emmett; Sgt. A. C. Evans; A/C.1 V. M. Everix; Sgt. H. W. Francis; Sgt. R. A. Freestone. Sgt. D. G. Garn; Sgt. R. W. Gentry; Sgt. J. M. Gibson; P/O. F. K. Gill; Sgt. D. K. Glass; Sgt. J. Golding; Act. Sqn. Ldr. D. C. F. Good, D.F.C.; P/O. N. H. Goodall; Sgt. F. Goodchild; P/O. P. B. Gough; Sgt. H. F. Hancock; Sgt. R. G. Hanson; Sgt. J. Harding; Sgt. V. W. J. Harrison; Sgt. P. R. Herbert; Sgt. F. Hewitson; Sgt. J. Hickingbotham; Sgt. G. W. Hickman; Sgt. E. P. Hill; Cpr. H. E. Hollis; Sgt. S. J. Holt; P/O. J. Howard; P/O. G. D. G. Hudson; Sgt. J. F. Hughes; Sgt. R. H. P. Humphris; Sgt. C. Hutchinson; Act. Sqn. Ldr. P. H. Jackson; Sgt. W. P. James; Sgt. A. Jordan; Sgt. L. J. Kennard; Sgt. J. G. Keymer; P/O. G. H. Kidd; Act. Sqn. Ldr. A. S. Lee; Sgt. P. J. Lewis; Flt. Lt. J. J. Lowe. Sgt. T. F. McDevette; Sgt. I. McLean; Sgt. A. V. McRae; P/O. W. A. McVie; F/O. I. N. W. Mackie; Sgt. L. Manchip; Sgt. R. Meech; Sgt. T. N. Menage; P/O. L. H. Mercer; Sgt. P. A. Mills; Sgt. W. E. Moore; Flt. Sgt. G. E. Morrison; Sgt. H. Nathan; Sgt. H. W. G. Norman-Arterton; Sgt. A. H. Norris; A/C.2 H. V. Norton; Sgt. F. C. Ockenden; Sgt. H. C. Page; Flt. Lt. G. T. Palmer, D.F.C.; Act. F/O. W. Panton; Sgt. G. B. Paterson; Flt. Sgt. G. Poock; Sgt. T. C. Pugh; Sgt. J. S. Ramsay; Flt. Sgt. E. C. Reed; Sgt. R. Richardson; Sgt. R. Ridgman-Parsons; Sgt. P. G. Rose; Sgt. R. E. Rowley; Sgt. J. K. Scouller; Sgt. J. B. Seden; Sgt. D. G. Shayler; Sgt. W. H. R. Smale; Sgt. G. Smith; P/O. I. O. MacK. Smith; F/O. V. G. D. Spiller; Sgt. C. F. Spouge; Act. Flt. Lt. E. N. Steel; Sgt. E. C. Stevens; Sgt. F. G. Stewart; P/O. R. W. Stolzle; Sgt. E. L. Stoodley; Sgt. L. G. Sutherland; Sgt. G. J. Talbot; Flt. Lt. R. E. Tallis; Sgt. H. A. Tann; A/C.2 T. Tattenbaum; Sgt. K. E. Taylor; Sgt. L. Thorpe; Sgt. A. Tizzard; Sgt. D. W. Townsend; Flt. Sgt. J. H. Tranter; Act. Flt. Lt. J. V. Tree; Sgt. H. K. Trewhella; Sgt. A. E. Vickers; Sgt. G. Wade; Sgt. D. S. Walsh; Sgt. D. F. E. Watson; Act. Wing. Cdr. A. G. Weir; P/O. D. White; Sgt. A. D. Whitson; P/O. D. F. R. Whyte; P/O. J. G. E. Willis; Sgt. J. P. Wilson; A/C.1 J. F. Woodward.

PREVIOUSLY REPORTED PRISONER OF WAR, NOW REPORTED MISSING, BELIEVED KILLED IN ACTION.—P/O. S. G. Esson; F/O. W. N. Gray; P/O. H. S. P. Williams.

PREVIOUSLY REPORTED PRISONER OF WAR, NOW REPORTED MISSING.—Sgt. C. A. C. Burran; Sgt. A. G. B. Crouch; P/O. P. C. Gaylard; P/O. C. S. Greenaway; Sgt. G. W. H. Kendall; Sgt. A. B.

Royal Air Force and Fleet Air Arm News and Announcements

Air Chief Marshal Sir Frederick William Bowhill, K.C.B., C.M.G., D.S.O. who relinquishes Coastal Command to take over the Flight Ferry Command.

Langford; Sgt. R. C. Trowbridge; Sgt. J. D. Wicks; Sgt. A. Williams.

MISSING, BELIEVED KILLED ON ACTIVE SERVICE (WHILE ENGAGED ON NON-OPERATIONAL FLYING DUTIES OR ON THE GROUND THROUGH ENEMY ACTION).—Sgt. M. H. H. D'Avigdor; Sgt. W. C. Henning; P/O. T. R. Hodgson; Cpl. H. G. Johnston; Flt. Lt. M. Kramer, D.F.C.; Sqn. Ldr. W. J. Methven; Sgt. E. R. Peacock; P/O. H. F. Perrott; Sgt. A. E. Sanne; Sgt. P. Savage; Sgt. J. F. Smith; Sgt. J. Whitbread.

KILLED ON ACTIVE SERVICE.—L.A/C. G. E. Abbett; A/C.2 J. S. W. Ballantyne; Sgt. R. N. Birkhead; P/O. A. C. Black; A/C.1 E. D. Boylin; P/O. L. S. Bradburn; Sgt. R. W. Brewin; F/O. J. W. L. Bruxner-Randall; Sgt. C. E. Bushford; Sqn. Ldr. A. W. J. Clark; Sgt. C. J. Clarke; P/O. G. H. Cotton; Flt. Sgt. A. G. Couch; L.A/C. J. R. T. Cox; L.A/C. W. H. Crampton; Sgt. D. G. Crichton; Flt. Lt. R. A. Cruikshank, D.F.C.; A/C.1 R. F. Davies; P/O. V. B. Dewhurst; Sgt. E. J. Easton; A/C.2 H. Elliott; Sgt. R. H. English; P/O. K. G. Evans; A/C.2 A. T. R. Fernyhough; Sgt. T. A. Forster; Sgt. E. D. Foster; Group Capt. F. F. Garraway, O.B.E.; L.A/C. H. Giles; P/O. P. A. Goode; Sgt. G. D. Gray; L.A/C. G. W. Grundy; F/O. L. A. Haines, D.F.C.; Sgt. R. S. Havery; P/O. R. J. Hawkes; A/C.1 T. G. Hawkes; Sgt. B. A. Headland; Sgt. R. S. K. Hickmott; Sgt. S. A. Hives; P/O. R. C. Holman; Sgt. E. Hughes; L.A/C. W. T. Innes; A/C.2 H. Jackson; A/C.1 A. A. Jarvis; Sgt. H. King; Sgt. T. L. Lever; Sgt. J. MacIntyre; F/O. A. F. M. MacLean; A/C.1 D. D. Mackay; Cpl. K. H. Marloth; L.A/C. I. Mercy; Sgt. J. A. Machan; A/C.1 J. B. Montgomery; A/C.2 J. H. Norbury; A/C.2 G. F. Owen; L.A/C. E. J. Oxford; Sgt. D. F. Percival; Sgt. R. A. Petter; A/C.2 F. M. Philp; Sgt. V. G. Pledge; Cpl. T. F. G. Press; Sgt. A. E. M. Prickett; Flt. Sgt. G. W. Radford; F/O. R. E. Ransome; A/C.1 J. B. Rebreck; A/C.1 H. Richardson; A/C.2 D. Ross; P/O. R. Scott; Cpl. G. W. Simpson; Sgt. G. W. Smith; L.A/C. W. Stafford; Sgt. D. A. B. Statton; Sgt. P. J. Taylor; F/O. H. S. Thomas; L.A/C. D. Thompson; Flt. Lt. H. C. S. Vetch; A/C.2 W. J. Wareham; P/O. D. R. Watts; Sgt. C. N. Weller; Sgt. F. J. Younger.

PREVIOUSLY REPORTED MISSING NOW PRESUMED KILLED ON ACTIVE SERVICE.—L.A/C. G. MacD. Diamond; L.A/C. J. I. Hepplewhite.

WOUNDED OR INJURED ON ACTIVE SERVICE.—P/O. G. S. P. Bain; L.A/C. H. Bath; A/C.1 F. Cox; A/C.2 T. Garratt; A/C.1 J. J. Hanley; Act. Flt. Lt. A. P. G. Holden; A/C.1 E. T. James; Cpl. C. L. S Knight; A/C.2 F. D. Mallett; A/C.1 J. R. Manley; Cpl. C. A. Morrell; A/C.2 J. L. Murphy; A/C.1 C. Parsons; Cpl. E. E. Rees; Sgt. A. J. Rose; A/C.2 W. J. Ross; L.A/C. G. Urquhart.

DIED OF WOUNDS OR INJURIES RECEIVED ON ACTIVE SERVICE.—L.A/C. C. R. Brace; Cpl. G. D. Brown; A/C.2 W. J. Devine; A/C.1 A. Grabie; Act. F/O. A. J. Heathfield; Sqn. Ldr. W. R. McCleery, A.F.M.; L.A/C. E. W. Mace; A/C.2 C. Martin; Flt. Sgt. P. G. Osborn; Cpl. S. Poole; Wing Cdr. J. C. Shakeshaft; A/C.1 G. A. Taylor; A/C.2 C. Webber.

DIED ON ACTIVE SERVICE.—A/C.2 G. Bell; A/C.2 R. Blundell; A/C.2 T. J. Bryant; Sgt. L. R. Burrows; A/C.1 G. F. Butcher; W/O. W. G. Craddock; L.A/C. T. S. Davies; A/C.1 W. L. Draper; A/C.1 G. M. Endsor, A/C.1 D. Fear; A/C.2 H. Floate; Flt. Sgt. R. Gowland, Sqn. Ldr. A. Hibberd, D.F.C.; L.A/C. F. H. J. Hucks; A/C.2 C. E. James; A/C.2 J. A. King; A/C.1 W. A. Mahoney; A/C.2 W. Moase; A/C.2 K. Phillips; Flt. Sgt. E. A. Prior; Sgt. T. R. Savin; Cpl. G. Weddle.

PREVIOUSLY REPORTED MISSING NOW REPORTED SAFE.—P/O. J. A. Barke, D.F.C.; Sgt. R. W. Scott.

PREVIOUSLY REPORTED MISSING NOW REPORTED PRISONER OF WAR.—P/O. J. W. E. Bridger.

Women's Auxiliary Air Force

A/CW.2 I. M. Cook.

Royal Australian Air Force

MISSING BELIEVED KILLED IN ACTION.—Cpl. G. O. Amos; L.A/C. R. D. Bell; A/C.1 J. C. Francis; Cpl. F. Hewitt; F/O. T. G Joyce; L.A/C. W. Raine.

KILLED ON ACTIVE SERVICE.—Sgt. F. A. V. M. Drummond; L.A/C. J. J. Golding; Cpl. K. J. McVicar.

Royal Canadian Air Force

MISSING.—Sgt. J H. Smith.

MISSING BELIEVED KILLED ON ACTIVE SERVICE.—Sgt. M. J. C. Craig.

KILLED ON ACTIVE SERVICE.—Sgt. J. Brissenden; P/O. T. M. Couper; Sgt. D. McLean; Sgt. A. R. Rennie.

Royal New Zealand Air Force

WOUNDED OR INJURED IN ACTION.—P/O. W. A. Fiddleton, D.F.C.

MISSING.—Sgt. R. R. Thomas.

KILLED ON ACTIVE SERVICE.—Sgt. E. R. Fremlin.

South African Air Force

PREVIOUSLY REPORTED MISSING BELIEVED KILLED IN ACTION, NOW REPORTED KILLED IN ACTION.—Lt. J. Van de Merwe.

MISSING.—Lt. G. Heller.

KILLED ON ACTIVE SERVICE.—Lt. B. R. Dimmock.

London Gazette
Royal Air Force

Air Ministry,
June 10, 1941.

The follg. promotions are made with effect from June 1:—

General Duties Branch.

Air Comdres. (act. Air Vice-Marshals) to be Air Vice-Marshals (temp.):—J. H. D'Albiac, D.S.O.; A. Coningham, D.S.O., M.C., D.F.C., A.F.C.

Air Comdres. (temp.) (act. Air Vice-Marshals) to be Air Vice-Marshals (temp.):—F. H. M. Maynard, A.F.C., C. E. H. Medhurst, O.B.E., M.C.

Group Capts. to be Air Comdres. (temp.):—C. H. K. Edmonds, D.S.O., O.B.E., E. A. B. Rice, C.B.E., M.C., C. E. W Lockyer.

Group Capts. (temp.) to be Air Comdres. (temp.):—H. B. Russell, D.F.C., A.F.C., R. S. Sorley, O.B.S., D.S.C., D.F.C., H. G Crowe, M.C., H. P. Lloyd, M.C., D.F.C. (act. Air Vice-Marshal).

Wing Cmdrs. to be Group Capts. (temp.):—H. S. Scroggs, N. P. Dixon, A.F.C. J. A. W. Binnie, V. S. Parker, D.F.C., A.F.C., J. Blackford, F. E. Bond, A. C. B. Harrison, C.B.E., M.C., R. L. Ragg, A.F.C., N. S. Paynter, B. H. C. Russell, I. E. Brodie, O.B.E., C. H. Flinn, C. D. Adams, D. M. Fleming, F. Kirk, O.B.E., W. L. Dawson, D. F. Anderson, D.F.C., A.F.C., E. A. Hodgson, C. McC. Vincent, D.F.C., A.F.C., R. H. Horniman, H. R. McL. Reid, D.F.C., G. H. Vasse, G. R. C. Spencer, O.B.E., S. H. Ware, W. M. M. Hurley, L. Martin, A.F.C., G. Harcourt-Smith, C.B.E., M.V.O., G. H. Mills, D.F.C., A. D. H. Foster, J. L. Wingate, R. N. Waite, E. A. C. Britton, D.F.C., J. Bradbury, D.F.C., C. B. Wincott, J. Silvester.

Sqn. Ldr. O. I. Gilson, A.F.C., is promoted to rank of Wing Cdr. (temp.), with effect from June 1 (sen. Sept. 1, 1940)

The follg. promotions are made with effect from June 1:—Sqn. Ldrs. to be Wing Cdrs. (temp.):—P. G. Scott, W. R. Beaman, L. H. Anderson, W. A. Richardson, A. R. Collins, J. B. Sims, E. A. Springall, D. Michell, W. D. Diabey, A.F.C., D. J. P. Lee, Viscount Acheson, A. C. P. Carver, J. P. Selby, H. Y. Humphreys, D. R. Shore, A.F.C., T. L. Moseley, D. Finlay, O.B.E., J. G. Davis, E. J. Palmer, P. B. Wood, P. H. Holmes, J. N. Tomes, E. A. Howell, B. Ball, J G. Munro, P. L. Donkin, S. J. Marchbank, R. J. Gosnell, D.F.C., M. D. Thunder, J. A. P. Owen, T. U. Rolfe, G. E. Macdonald, W. B. Murray, D.F.C., B. K. Burnett, A.F.C., R. A. C. Carter, A. Golding, D.F.C., E. V. Knowles, P. S. Salter, A.F.C., D. S. Radford, D.F.C., M. F. B. Read, W. L. Stedman, H. P. Burwood, H. S. Darley, D.S.O., A. J. Kennedy, A. J. W. Geddes, O.B.E. (Capt., R.A.), A. F. Johnson, J. D. Nelson, G. F. L. Scott, J. R. Jeudwine, J. H. Chaplin, D.F.C., C. F. Pearce, O. H. D. Blomfield, E. E. Vielle, V. E. Maxwell, G. C. Eveleigh, C. T. Weir, P. A. McWhannell, E. T. Smith, C. J. P. Flood, P. H. Dunn, D.F.C., P. H. Dutton, P. B. B. Ogilvie, D.S.O., A. Franklin, F. S. Stapleton, A. T. D. Sanders, J. F. H. du Boulay, D.F.C., E. L. Colbeck-Welch, B. A. Chacksfield, A. F. R. Bennett, K. Gray, H. J. Maguire, H. D. U. Dennison, P. D. Holder.

Flt. Lts. to be Sqn. Ldrs. (temp.):—F. C. Phipps, F. M. Benito (Capt., S. Lancs. Regt.), A. D. Bryant (Capt., R. Northumberland Fusiliers), R. D. C. Gibson, D.F.C., R. Slater, J. R. I. Bell, J. N. W. Farmer, D.F.C., R. N. Lambert, G. M. Wyatt, D.F.C., J. D. Harris, P. A. Tipping, D. J. McGlinn, A. F. M. Sisley, R. K. Wildey, D.F.C., J. Butterworth, B. Bell, G. C. Hyde, E. J. Brooks, D.F.C., E. G. Jones, D.F.C. W. M. Penman, B. G. D. Nathan, C. J. Donovan, L. L. Hunt, R. G. Hurst, G. D. Jones, D.F.C., M. L. Robinson, D.F.C., H. J. Garlick, D.F.C., A. R. L. Griffiths, D. I. McLeod, E. M. Ware, D.F.C., F. E. Rosier, W. H. Biddell, D.F.C., B. J. Sandeman, P. R. Walker, D.F.C., T. F. D. Morgan, D.F.C., C. B. E. Burt-Andrews, R. D. B. MacFadden, D.F.C., D. H. Burnside, D.F.C.

Technical Branch.

Air Comdre. to be Air Vice-Marshal (temp.):—A. S. Morris, O.B.E.

Wing Cdrs. to be Group Capts. (temp.):—F. E. Vernon, O.B.E., J. R. Wolley, L. de V. Chisman, D.F.C., M. W. C. Ridgway, R. C. Wansbrough, R. Menzies, G. C. Shepherd, R. O. Jones, A.F.C.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—C. M. Stewart, K. J. McKay, N. W. Wakelin, E. M. T. Howell, H. B. Hurley, J. N. Knowles, G. W. Peel, J. Shepherd-Smith, N. D. Gilbart-Smith.

Flt. Lts. to be Sqn. Ldrs. (temp.):—J. F. A. Day, A.F.C. (ret.), M. H. Coote (ret.), C. R. Walters, S. W. Blight, C. H. Wilson, A. M. Davidson, J. J. Burton, A. K. Hunter, H. H. Laurie, T. E. J. Fitton, E. D. Jackson, W. Webster, M.B.E., I. F. Chambers, F. J. A. Willis, C. L. Trevithick, H. Cadman, A.F.M., W. Squires, A. E. Clayson, A. Marks, A. E. Pearce, M. F. G. Mill, D.F.M., D. J. Day, A. G. Williams, P. H. Scoley, F. A. Kirk, W. McCarthy, H. E. Brushwood, F. Stevens, A. E. Davies, R. Herrick, P. G. G. Begrie, W. J. Scrivener, J. S. Brett, A.F.M., W. R. Frost, J. Bradshaw, A. B. Kendall, M.B.E., A. J. V. Parish, R. L. Bell, F. H. Catton, W. Moore, H. L. Millyard, M.B.E., E. R. Paley, W. J. S. Barnard, M.B.E., L. G. Hucker, B. A. Vautier, R. D. Gough, L. Davey, J. H. Styles, E. W. Long, A. D. Rutherford, D.F.M., W. R. Lockhart, V. G. Macario, W. E. Wendon, J. Lindsay, M.B.E., H. J. Maxted, J. Woods, J. A. C. Pride, D. McLaren.

Equipment Branch.

Air Comdres. (Act. Air Vice-Marshals) to be Air Vice-Marshals (temp.):—G. Laing, C.B.E., E. W. Havers.

SERVICE AVIATION

Group Capt. to be Air Comdre. (temp.):—H. L. Crichton, M.B.E.

Wing Cdrs. to be Group Capts. (temp.):—F. A. Skoulding, E. G. Keeping, A. Walters, O.B.E., V. B. Ranford.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—A. Connock, H. H. Hilliar, G. C. Allen, H. E. Freeston, J. W. C. Revill, G. Blinman, H. A. Sudbury, E. N. Lowe, W. A. Lee, B. S. Cartmel, E. R. Berry, E. E. Copper, C. H. Baker, M.B.E., W. Eccles, S. W. Thomas, O.B.E.

Flt. Lt. to be Sqn. Ldr. (temp.):—D. Yellowley, F/Os. to be Flt. Lts. (temp.):—D. Stuart, E. Towers, R. M. W. Henderson, J. B. Quarrington, I. P. D. Stocker, G. G. Cartridge, D. H. Wood, J. Hamilton, R. W. Head, P. P. Butler, E. F. Wisdom, J. M. Howard, A. P. B. Moore, D. Moulden, A. L. Cornford, J. J. Dutton, E. D. Bradfield, M. Collinson, H. R. E. Rumsey, D. C. Walker, R. S. Burles, G. R. Cook, J. E. M. Mould, C. C. Murdoch, C. Murray, A. Sloss, J. G. Bishop, T. J. Heath, G. W. Northcombe, W. J. A. Pritchett, H. B. Scully, R. D. Stephens, G. P. S. Thomas, J. P. Beale, A. M. H. Cole, A. H. Knowles, K. J. Hattrick, D. S. E. Gawith, G. L. Lister, E. L. Macro, L. F. Styles, C. A. Griggs, J. S. Wilkinson, R. Williams, S. R. W. Amor, A. W. Rhodes, E. M. Sopwith, J. P. W. Purves, A. P. H. Slogrove, D. E. Henderson, B. B. Johnson, G. M. Darling, E. V. Davies, H. R. K. Wells.

Accountant Branch.

Wing Cdr. to be Group Capt. (temp.):—P. A. Simmons.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—C. Lorimer, R. A. J. Mullarkey, E. L. G. Le Dieu, B. Chadwell, C. F. Goatcher, T. P. E. Campbell.

F/Os. to be Flt. Lts. (temp.):—J. E. S. Salter, R. D. I. Scott, R. Pilsbury, R. J. Sharples, R. R. Jack, S. C. Tapley, D. H. Mortimore, P. E. Crosland, R. J. Bray, P. Raby, J. H. C. Russell, J. A. Bryden, R. D. White, W. B. H. Vidgeon, J. A. T. Plummer, R. B. Thomas, J. R. Cox, J. B. Bennett, A. Lees.

Medical Branch.

Group Capt. to be Air Comdre. (temp.):—H. A. Hewat, M.B., Ch.B., D.T.M. & H.

Wing Cdrs. to be Group Capts. (temp.):—T. J. Thomas, M.B., B.S., W. E. Barnes, M.R.C.S., L.R.C.P., J. D. Leahy, M.C., M.B., B.Ch., E. C. K. H. Foreman, M.R.C.S., L.R.C.P., W. J. G. Walker, M.R.C.S., L.R.C.P.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—R. S. Topham, M.B., Ch.B., M.R.C.S., L.R.C.P., D.P.H., D.M.R.E. (ret.), L. P. McCullagh, M.B., B.Ch. (ret.), D. A. Wilson, M.R.C.S., L.R.C.P., D.M.R.E., D.M.R., H. C. S. Pimblett, M.D., B.S., D.C.O.G., J. Kemp, M.B., Ch.B., D.P.H., P. J. McNally, M.B., B.Ch., D.P.H., G. H. J. Williams, M.R.C.S., L.R.C.P., J. F. McGovern, M.B., M.Ch., C. Crowley, M.B., B.Ch., D.P.H., G. O. Williams, M.R.C.S., L.R.C.P.

Flt. Lts. to be Sqn. Ldrs. (temp.):—J. H. Cullinan, M.R.C.S., L.R.C.P. (ret.), J. L. Walsh, M.B., B.S., J. F. Dales, M.R.C.S., L.R.C.P., A. Everett, M.R.C.S., L.R.C.P., H. Bannerman, M.B., B.S., G. Gilchrist, M.B., B.S., G. H. Morley, F.R.C.S., L.R.C.P., J. C. Blair, M.B., Ch.B., A. W. Smith, M.B., B.S., J. W. Patrick, M.B., B.Ch., D.P.H., J. S. Wilson, M.B., Ch.B., H. L. Willcox, M.B., Ch.B., P. A. Cooper, M.R.C.S., L.R.C.P.

Dental Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—V. H. Weeks, L.D.S., D. I. Malcolmson, L.D.S., H. Keggin, L.D.S., W. V. A. Denney, L.D.S., H. M. G. Williams, L.D.S., K. G. Swiss, L.D.S., D. P. Boyle, L.D.S., R. M. Brown, L.D.S., R. A. Pepper, H.D.D., L.D.S., W. E. Nelson, L.D.S.

Reserve of Air Force Officers

General Duties Branch.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—J. R. Jaques, J. B. T. Whitehead, G. W. P. Grant, R. I. G. MacDougall.

Flt. Lts. to be Sqn. Ldrs. (temp.):—R. B. Brown, P. W. Johnson, A.F.C., A. J. Hicks, F. H. Bugg, C. G. Davies, J. F. McKenna, H. L. Smith, R. B. Abraham, L. T. G. Barber, G. A. C. Foster, A.F.C., G. F. K. Donaldson, A. D. Isemonger, the Hon. G. R. Ward, E. P. Gibbs, I. M. T. de F. Bocock, G. P. Seymour-Price, F. D. Nugent, A.F.C., C. L. Gomm, D.F.C., C. W. Cudemore, M.C., D.F.C., M. N. Hancocks, C. Gardner, W. L. McLaren, F. B. Tomkins, R. Benham, H. C. D. Hayter, R. G. Weighill, A. L. T. Naish, A. Haywood, H. Kerr, J. C. McE. Gibb, R. P. Garnons-Williams, C. R. Davies, A. E. Clouston, A.F.C., J. B. Burnett, P. A. Gilchrist, D.F.C., P. Hadfield, B. E. Dobb.

Technical Branch.

Flt. Lt. to be Sqn. Ldr. (temp.):—H. R. Ellison.

Medical Branch.

Sqn. Ldr. to be Wing Cdr. (temp.):—A. T. G. Thomas, M.D., B.S., D.P.H.

Flt. Lts. to be Sqn. Ldrs. (temp.):—C. McC. Jones, M.B., B.Ch., M.R.C.S., L.R.C.P., W. D. Miller, M.B., Ch.B., E. G. Howell, M.R.C.S., L.R.C.P., E. A. Rice, M.B., B.Ch., R. F. MacLatchy, M.D., C.M., L.M.S., J. L. Groom, M.R.C.S., L.R.C.P., A. R. French, M.R.C.S., L.R.C.P. E. W. B. Griffiths, M.B., Ch.B., F.R.C.S.(E.), D.O.M.S., W. A. Beck, M.B., Ch.B., D.P.H., M. D. Rawkins, M.B., B.S., M.R.C.S., L.R.C.P., T. A. G Hudson, L.R.C.P. & S.

Dental Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—A. P Atkins, L.D.S., O. F. Brown, L.D.S.

SERVICE AVIATION

Royal Air Force Volunteer Reserve

Technical Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—F. J. Knowler, S. H. Reynolds, E. Taylor, D. K. Cameron, H. Gott, D.S.M., E. H. Rundle, F. N. McDowell.

Balloon Branch.

Flt. Lt. to be Sqn. Ldr. (temp.):—J. L. Bell. F/Os. to be Flt. Lts. (temp.):—Lord Ventry, J. E. T. Gwynne, R. A. Nunn.

Equipment Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—A. S. Fraser, L. C. Lawrance, J. A. Crouch, A. C. Bolton, M.C., V. G. Crews. F/Os. to be Flt. Lts. (temp.):—W. Burton, H. A. S. Gothard, D. J. Rouse, A. E. L. Cooper, E. W. Veysey, R. H. Johnson, E. D. W. Mercer, F. H. Whiteley, I. R. Mascall, M. W. Fuller, F. R. Turner, J. F. Hinks, L. N. Saw, L. J. Ryall, A. Williams, F. Williamson, C. E. Wratten, J. Robertson, R. V. Whittaker, J. Heard, E. F. B. Markland, R. C. Paine, A. E. Savill, R. G. Ashton, F. J. Mills, E. G. Cooper, G. B. Howard-Rice, S. G. Bucknall, C. E. Plummer, N. M. Walker, R. E. Fearn.

Medical Branch.

Sqn. Ldrs. to be Wing Cdrs. (temp.):—C. W. Flemming, D.M., M.Ch., F.R.C.S., L.R.C.P.; G. L. M. McElligott, M.R.C.S., L.R.C.P.; F. W. Roques, M.D., M.Ch., F.R.C.S., F.R.C.O.G.; J. F. Simpson, F.R.C.S., L.R.C.P.; D. H. Brinton, D.M., B.Ch., F.R.C.P.; S. Cade, F.R.C.S., L.R.C.P.; R. R. Trail, M.C., M.D., Ch.B., F.R.C.P.; J. G. Skeet, M.R.C.S., L.R.C.P.; T. K. Lyle, M.D., M.Ch., F.R.C.S., M.R.C.P.; E. T. Cato, M.B., B.S., F.R.C.S.; N. K. Henderson, M.B., Ch.B., D.P.H., D.P.M.; R. N. Ironside, M.B., Ch.B., F.R.C.P. Flt. Lts. to be Sqn. Ldrs. (temp.) H. C. Purcer-Smith, M.B., Ch.B.; G. P. Smith, M.B., Ch.B.; A. W. Badenoch, M.D., Ch.B., F.R.C.S.; G. A. Jamieson, M.B., B.S., D.O.M.S., D.L.O.; J. T. Linklater, M.R.C.S., L.R.C.P.; G. M. Rose, L.R.C.P. and S., L.D.S.; H. F. Squire, M.R.C.S., L.R.C.P.; R. D. Bruce, M.B., Ch.B., T. G. Hovenden, M.R.C.S., L.R.C.P.; T. J. B. A. MacGowan, M.B., Ch.M., F.R.C.S., F.R.C.S.(E.); L. V. McNabb, M.B., B.S.; D. F. E. Nash, F.R.C.S., L.R.C.P.; H. B. Bagshaw, M.B., B.Ch., F.R.C.S.(E.), M.R.C.S., L.R.C.P.; H. W. Dryerre, M.B., Ch.B., F.R.C.P.(E.); F. P. Forrest, M.B., B.S., F.R.C.S.(E.); J. A. Pocock, M.B., B.Ch., F.R.C.S., L.R.C.P.; K. J. Thomson, M.B., Ch.B., D.P.H.; E. McD. Walker, M.D., Ch.B., A. G. Wilson, M.C., M.R.C.S., L.R.C.P.; C. J. Shortall, M.D., M.Ch., F.R.C.S.(I.).

Auxiliary Air Force

General Duties Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—W. B. A. J. Keppel; S. H. Skinner; Sir A. P. Hope, Bt., D.F.C.; R. A. Clay, G. O. Budd; S. G. Beaumont; J. Cunningham, D.S.O., D.F.C.; C. D. Griffiths, D.F.C.; G. G. Stockdale; P. K. Stead.

Technical Branch.

Flt. Lt. to be Sqn. Ldr. (temp.):—G. A. W. Garland.

Balloon Branch.

Wing Cdr. to be Group Capt. (temp.):—G. R. Curtis, O.B.E., T.D. Sqn. Ldrs. to be Wing Cdrs. (temp.):—W. T. Barnes, O.B.E.; F. Robinson; V. C. T. Lane; W. E. B. Barclay, M.C.; A. H. E. Dew; R. G. Frith; H. E. Hills. Flt. Lts. to be Sqn. Ldrs. (temp.):—L. Kemp, E. D. Salthouse, G. W. G. Tucker, T.D., C. D. Kershaw, S. J. Palmer, H. G. Dehn, R. E. Mason, W. Gresty, M.C., A. W. Kay, J. S. Saxby, I. H. Lawrence, G. A. Newenham, W. H. R. Lloyds, M.C., M. B. C. Lake. F/Os. to be Flt. Lts. (temp.):—P. C. Campbell, G. B. Gilbert, H. L. Hutchinson, G. B. Monkman, R. F. Armitage, T. F. Garside, A. Walker, J. H. Musker, R. J. S. Martin, J. W. Huggins, C. L. S. Cornwall-Legh, G. M. Christian, T. B. Bright, K. B. H. Edwards, T. E. Beddard, P. L. W. Morton, M. F. Darke, H. W. Kerr, M.P.

Accountant Branch.

F/O. to be Flt. Lt. (temp.):—J. Macaldowie.

Medical Branch.

Sqn. Ldr. to be Wing Cdr. (temp.):—J. C. H. Allan, M.B., Ch.B. Flt. Lts. to be Sqn. Ldrs. (temp.):—D. A. Smith, M.B.E., M.B., Ch.B., M.R.C.P.(E.); I. A. G. L. Dick, M.D., Ch.B., F.R.C.S.(E.); C. W. Kidd, M.D., B.Ch.; J. P. Huins, M.R.C.S., L.R.C.P.; I. R. Jones, M.R.C.S., L.R.C.P.; T. McM. Boyle, M.B., Ch.B., F.R.C.S., L.R.C.P.; J. H. Attwood, M.B., B.S., M.R.C.S., L.R.C.P., D.A.; W. D. Coltart, M.B., B.S., F.R.C.S., L.R.C.P.; W. D. Peock, M.B., Ch.B.

Auxiliary Air Force Reserve of Officers

General Duties Branch.

Flt. Lt. to be Sqn. Ldr. (temp.):—P. D. O. Vaux.

Medical Branch.

Flt. Lts. to be Sqn. Ldrs. (temp.):—A. C. Fraser, M.B., B.Ch., M.R.C.S., L.R.C.P., D.A.; H. W. Walter, M.B., B.S.

Auxiliary Air Force

General Duties Branch.

Wing Cdrs. to be Group Capts. (temp.):—Duke of Hamilton and Brandon, A.F.C.; Lord G. N. Douglas-Hamilton, O.B.E., A.F.C.; P. G. Stewart; R. G. Shaw, D.F.C. Flt. Lt. to be Sqn. Ldr. (temp.):—W. B. Beale.

Royal Air Force

Air Ministry,
June 13, 1941.

General Duties Branch.

The follg. are granted commns. for the duration as P/Os. on probn.:—W/Os.: (May 17) R. M. Teale. Flt. Sgts.: (May 1) W. R. Kelly; (May 8) C. G. Burton; (May 15) J. H. Richardson, J. C. K. Button; (May 17) J. Holt, J. A. King. Sgts.: (Apr. 20) G. V. Smith; (Apr. 26) C. R. W. Armes; (Apr. 27) B. W. Way; (May 11) A. T. E. Greenway; (May 15) W. H. Cowman, L. W. G. Ward, H. H. Levack; (May 16) V. Phillips, J. C. M. McAlister, A. G. Swan, R. G. Walder. Cpl.: (Apr. 27) W. Teare. L.A/C.: (Apr. 20) J. A. Pile.

The follg. P/Os. on probn. are confirmed in their appts. and promoted to war substve. rank of F/O.: (Apr. 1) E. F. J. O'Doire, D.F.C., H. E. G. Keast, P. H. Watts, D.F.C.; (Apr. 7) H. Andrew; (May 18) J. H. Leland.

The follg. F/Os. are promoted to war substve. rank of Flt. Lt.:—(Dec. 15, 1940) A. B. Harrison; (Feb. 28) D. T. Parrott; (Apr. 23) J. Plant; (Apr. 25) W. J. Ditto; (Apr. 30) H. H. B. Mould; (May 24) M. G. Robin; (May 25) W. D. Beckingham, F. R. McAuliffe; (June 1) L. H. Carey; (June 6) T. P. Harnett.

The follg. P/Os. are promoted to war substve. rank of F/O.:(Mar. 24) B. V. Kerwin; (Apr. 11) R. N. Alcock (2nd Lt., R.E., T.A.), W. St. C. McNeilly (2nd Lt., Inniskilling Fus.); (May 4) C. L. G. Holmes, R. M. Pinkham, J. V. Verran, D.F.C.; (May 11) P. A. Loweth; (May 13) P. R. Bellamy (2nd Lt., Act. Capt., London Irish), E. H. M. Nesbitt (Lt., K.S.L.I.); (May 18) P. J. S. Boggis, J. K. M. Cooke, E. O. Richards; (May 20) S. C. R. Bell, E. G. Webb.

The notifn. of May 9 concerning F/O. J. D. Smith is cancelled.

Air Comdre. R. S. Sorley, O.B.E., D.S.C., D.F.C., is granted acting rank of Air Vice-Marshal. (June 5.)

Sqn. Ldr. R. A. B. Rae is transld. to Technical Branch. (Apr. 24, 1940.)

Group Capt. R. T. Leather, A.F.C., is placed on retired list at own request. (May 26.)

Flt. Lt. L. Vincent is placed on retired list on account of ill-health. (May 28.)

P/O. J. L. Gledhill, 2nd Lt., R.A., relinquishes his temp. commn. on return to Army duty. (May 7.)

F/O. R. J. Bailey resigns his short service comm. (May 31.)

Flt. Lt. R. F. Marrack is sentenced by G.C.M. to take rank and precedence as if his name appeared 100 places lower in the Air Force List (reduction to take effect from Jan. 10) and is dismissed the Service by sentence of G.C.M. with effect from Mar. 3.

P/O. R. C. F. Finch is cashiered by sentence of G.C.M. (Mar. 11.)

Technical Branch.

The follg. are granted commns. for duration:—as F/Os. on probn.:—W/Os.: (May 5, Sen. Nov. 25, 1940) E. C. White; (May 10, Sen. Jan 10) J. D. McDonald; (Sen. Jan. 13) C. A. Barrett, F. Holmes, D.F.M.; (May 16) F. T. Baynham; (May 19) C. W. Reading; (May 20, Sen. Dec. 4, 1940) H. H. Harvey, M.M. As P/Os. on probn.:—W/Os.: (Apr. 12) F. Griffin; (May 5) N. G. N. Davis; (May 10) W. G. Tiley; (May 12, Sen. Jan. 5) J. J. Cradden, S. F. Kettell; (May 20) F. G. C. Niblet; (May 21) F. J. Walters. Act. W/O.: (May 19) J. F. L. Cartwright. Flt. Sgts.: (May 5) E. F. Ockenden; (May 9, Sen. Jan. 5) P. M. Cox; (May 12, Sen. Jan. 21) R. J. Alderson; (May 13) T. A. Yates; (May 16) H. L. Duck, A. W. Wootton. Sgts.: (May 12) S. M. Russell; (May 13) A. H. Porter. As Act. P/Os. on probn.:—Flt. Sgts.: (May 23, Sen. Nov. 26, 1940) R. N. Payne, H. R. Brooks. Sgt.: (May 16) F. T. Bolt. Temp. Sgt.: (May 25, Sen. Jan. 5) V. Topps.

The follg. F/Os. are promoted to war substve. rank of Flt. Lt.:—(Apr. 6) H. J. Baines; (Apr. 14) T. J. A. Cresswell; (Apr. 20) C. G. Johnson; (June 9) R. H. Thomas.

P/O on probn. W. H. Westgate, M.B.E., is promoted to war substve. rank of F/O. on probn. (May 15.)

Administrative and Special Duties Branch.

The follg. are granted commns. for duration as F/Os. on probn.:—W/Os.: (May 10, Sen. Oct. 30, 1940) W. F. B. Elwen; (May 15) C. E. Bailey; (May 16) J. H. Bradbury; (May 23) C. G. Jackson. As P/Os on probn.:— W/Os.: (Apr. 6) F. A. Piper; (May 2) L. Simm; (May 16) C. Pulston, H. V. W. C. Jones. Flt. Sgt.: (May 23) H. B. Brent. Sgts.: (May 16) J. Tooley, R. Brice. As Act. P/O. on probn.: R. A. P. Turner.

The follg. Act. P/Os. on probn. are graded as P/Os. on probn.:—(May 2) W. Todd, A. Wood, G. G. Steele; (May 9) L. A. Popham, E. Cuthbert-Johnstone.

The follg. are transld. to Technical Branch as P/Os. on probn.:—(Mar. 28) S. J. Davies, W. R. J. Marriott, F. L. Payne.

Notifn. of Apr. 4 concerning P/O. R. S. Sweetlove is cancelled.

Equipment Branch.

The follg. are granted commns. for duration as F/Os. on probn.:—W/Os.: (May 16) R. B. Dembrill; (May 23) A. W. Brazier. As P/Os. on probn.:—W/O.: (Apr. 12) W. W. Howe. As Act. P/O. on probn.:—Flt. Sgt.: (May 23) F. Shaw.

P/O. P. J. Finn is granted war substve. rank of F/O as from June 11, 1940, and confmd. in his appt. as from Aug. 17, 1940 (substd. for notifn. of Dec. 3, 1940).

F/O. J. H. Griffith resigns his short service comm. (June 5).

Accountant Branch.

W/O. A. E. Hammond is granted a comm. for duration as P/O. on probn. (May 1).

P/O. on probn. F. J. Fox is promoted to war substve. rank of F/O. on probn (Apr. 1).

Royal Air Force Reserve

RESERVE OF AIR FORCE OFFICERS

General Duties Branch.

The follg. F/Os. are promoted to war substve. rank of Flt. Lt.:—(May 18) J. C. Corby; (June 9) J. H. Thompson.

F/O. E. H. Alliott is transld. to Technical Branch (Jan. 17).

Sqn. Ldr. J. W. Thomson relinquishes his comm. on completion of service (Apr. 20).

F/O. N. T. Tangye relinquishes his comm. on appt. to a comm. in the R.A.F.V.R. (Jan. 1, 1937)

Flt. Lt. J. E. Turner resigns his comm. (May 26).

Erratum

Notifn. of May 16 concerning P/O. on probn. L. J. Nolder should have appeared under heading "R.A.F." and *not* "R. of A.F.O."

Royal Air Force Volunteer Reserve

General Duties Branch.

N. T. Tangye is granted a comm. as F/O. (Jan. 1, 1937, Sen. Mar. 6, 1934).

The follg. are granted commns. for duration as P/Os. on probn.:—Sgts.: (Mar. 5) R. R. Michell;

BRIGHT SPARKS: Coastal Command W.A.A.F.s testing sparking plugs of the Bristol Pegasus XXIIs in the Short Sunderlands.

(Apr. 2) R. B. Cole. A. C. Johnston, P. D. Moriarty; (Apr. 23) E. Goy; (Apr. 24) G. S. Willshar; (Apr. 26) G. Lambert; (May 1) R. G. V. Barraclough, S. Cook, N. E. Roscoe; (May 8) P. S. Huggins, H. L. Holliday, H. Waples; (May 9) J. H. Wire; (May 11) G. M. Bridges; (May 15) R. J. Shuttleboth am, H. W. Smethurst, S. Wareing, J. S. V. Fegan, I. G. Campbell, M. W. Colledge, R. D. Morley, D. Roughley; (May 16) E. Ellis, G. O'Connell, P. S. F. Walmsley, K. R. Lusty, J. W. Pye; (May 17) I. A. Wood, V. G. Pettitt, R. F. Sweeting. Cpl.: (May 9) J. E. Wardman. Act. Cpl.: (Feb. 10) J. E. Slade. L.A/C.: (Jan. 18) F. H. S. West; (Feb. 10) H. M. Williams, R. F. Wollaston; (Mar. 6) D. W. Fenton; (Mar. 9) F. J. Fraser; (Mar. 16) C. J. E. Bonstead, A. H. Burr, J. E. M. Conran, H. F. Dukes-Smith, N. S. Head, J. G. K. Hulbert, J. C. Hutton, J. E. Johnson, K. H. Ledbrook, C. H. Potter, E. J. Pullen, D. A. Thompson, R. G. St. C. Wadsworth, H. Williams; (Apr. 1) J. W. Jordan; (Apr. 6) G. M. Kennedy; (Apr. 19) J. N. G. Bruce; (Apr. 26) B. D. Tucker, P. C. Ramachandran; (Apr. 27) G. C. Buxton, G. W. Green, N. E. Winch, A. F. N. Ladefoged; (May 4) H. Sorensen; (May 6) J. W. T. Amey, P. E. Daniels, C. E. Horwood, K. G. Hubbard, G. B. Johnson, W. M. Livingston, L. T. Manser, E. Minty, J. H. Y. Owen, B. A. C. Richards, E. K. Sinclair, G. F. Smith, L. G. R. Wallington, N. M. Williams; (May 9) F. S. Cundy, J. W. Nixon, D. W. T. Stealey, F. A. Taylor, R. J. Urquhart, A. S. Hunter; (May 11) C. Belfield, F. R. Davy, R. S. Emerson, W. C. H. Hallett, D. S. Iles, G. W. V. Keedle, P. Mains-Smith, K. R. Mason, R. P. Smith, P. L. R. Williams, N. W. Wright, A. C. Blythe, J. F. P. Fitzgerald, J. V. Heptinstall, G. Humes, H. D. Kelvin, E. W. Knowles, R. A. McConnochie, W. J. Martin, D. B. Organ, H. J. Quick, P. Reynolds, R. N. Rostance, F. M. Slater, J. E. Ward, J. E. White; (May 15) A. J. Arnot, O. W. H. Berkeley-Hill, C. E. Brayshaw, M. A. Colvin, R. H. Fletcher, M. G. Hilton, J. M. Joyce-Clarke, C. H. Lazenby, B. P. O'Dowd, J. I. Phœnix, S. J. Reed, W. N. Ritchie, B. T. Tatham; (May 18) P. J. P. Anderson, E. R. Cowan, K. W. Dobson, D. B. Graeme, G. B. Howson, K. C. Mackenzie, J. E. Millns, R. D. Pegram, P. B. G. Spary, E. W. Swarsbrick, A. de M. Turner, L. A. Wells, M. C. Woodgate, E. J. Woodhead.

The follg. P/Os. on probn. are confirmed in their appts. and promoted to war substve. rank of F/O.: —(May 5) J. F. A. Holloway, A. Reid, E. L. Slinn; (May 12) D. A. G. Parry, D.F.C., J. H. Reeve; (May 6) R. A. F. Farquharson; (May 19) J. D. Chown, T. W. Evans, P. M. Maggs, F. A. Moseley, N. S. Royle, B. H. J. Watson; (May 27) K. G. Greenacre.

P/O. on probn. A. E. V. Oliver is confirmed in his appt. as from Dec. 30, 1940, and promoted to war substve. rank of F/O. as from Mar. 2.

P/O. on probn. M. F. Bannerman is confirmed in his appt. as from Feb. 3 and promoted to war substve. rank of F/O. as from Apr. 22.

P/O. on probn. V. V. L. Clarke is confirmed in his appt. as from Mar. 2 and promoted to war substve. rank of F/O. as from Apr. 6.

The follg. P/Os. on probn. are confirmed in their appts. as from Mar. 9 and promoted to war substve. rank of F/O. as from dates stated:— (Apr. 20) G. A. Isbell; (Apr. 22) W. N. Rayner; (May 4) O. E. Wiltshear, D.F.C.

The follg. P/Os. on probn. are confirmed in their appts. as from Mar. 15 and promoted to war substve. rank of F/O as from dates stated:—(May 4) W. Osborne; (May 13) C. A. Fraser Petherbridge; (May 16) H. D. Spry.

The follg. P/Os. on probn. are confirmed in their appts. as from Mar. 26 and promoted to war substve. rank of F/O. as from May 15:—C. C. Sherring, A. Findlay-Fleming.

P/O. on probn. E. G. Shears is confirmed in his appt. as from Mar. 29 and promoted to war substve. rank of F/O. as from May 13.

P/O on probn. H. J. Madden is confirmed in his appt. as from Apr. 6 and promoted to war substve. rank of F/O. as from May 14.

P/O. on probn. K. C. Rogers is confirmed in his appt. as from Apr. 20 and promoted to war substve. rank of F/O. as from May 13.

The follg. F/Os. are promoted to war substve. rank of Flt. Lt.:—(Apr. 6) H. M. Young, D.F.C.; (Apr. 20) N. S. H. Brown; (June 8) G. S. Waller.

P/O. J. H. Bourne is promoted to war substve. rank of F/O (Feb. 12).

The follg. Act. P/Os. on probn are graded as P/Os. on probn.:—(Sept. 26, 1940) D. S. S. Low; (Dec. 14, 1940) R. A. Pullin; (Apr. 26) A. C. Fairbrough.

Act. P/O. on probn. J. F. W. J. Henry is transfd. to Balloon Branch (May 24.

P/O. on probn. E. L. Robinson is transfd. to Administrative and Special Duties Branch (May 30).

The follg. relinquish their commns. on account of ill-health:—P/Os. on probn.: (June 2) T. F. W. Nixon; (June 11) J. A. Jourdain.

The follg. resigns his comm.:—(Apr. 29) Sqn. Ldr. F. S. Cotton, O.B.E.

The notifn. of May 16 concerning F/O. M. C. H. Barber is cancelled.

Technical Branch.

The follg are granted commns. for duration as P/O. on probn.:—Flt. Sgt.: (May 19) V. G. Tucker. As Act. P/Os. on probn.:—Flt. Sgt.: (May 23. Sen. Nov 26, 1940) H. A. Weight, Cpl.; G. S. Baker, L.A/C.: (May 16) J. Macdonald.

The follg. P/Os. on probn. are confirmed in their appts. and promoted to war substve. rank of F/O.:—(Mar. 11) P. S. Saunders; (Mar. 31) A. H. Pooley; (Apr. 1) E. R. Crowther; (Apr. 8) J. K. Maw; (May 3) H. Royston; (May 4) H. Arthur, A. S. Mohan; (May 25) R. Piercy; (May 31) J. N. C. Law, E. P. Salmon.

Balloon Branch.

The follg. are granted commns. for duration as P/Os. on probn.:—Flt. Sgt.: (May 8) E. M. E. Cramp. Sgt.: (May 14) R. E. Pearce. Cpls.: (May 8) J. S. Stokes; (May 12) A. Scott; (May 19) W. Hunter; (May 20) L. W. Brown. L.A/C.: (May 19) G. D. Hardy.

The follg. P/Os. on probn. are confirmed in their appts. and promoted to war substve. rank of F/O.: —(May 11) I. S. Macdonald; (May 13) C. Raynes; (June 1) V. P. Brown; (June 5) H. T. Murly-Gotto, A. G. L. Young; (June 6) R. W. Buck, F. S. James; (June 7) H. M. A. Cocks, C. G. Gerry, K. A. Southwell.

Administrative and Special Duties Branch.

The follg. are granted commns. for durn.:—As F/O. on probn.: (Sept. 30, 1940) L. C. Munn (substd. for notifn. of Nov. 26, 1940). As P/Os. on probn.: (Feb. 21) H. M. Sichel; (Apr. 4) E. G. Thorpe; (Apr. 25) C. A. S. Parker; (Apr. 30) J. L. McCullum, J. F. Weale; (May 2) V. P. David, A. P. Spencer; (May 7) George, Earl of Haddington; (May 15) G. T. Drake-Brockman, H. B. Gibson, G. M. Thackrah, C. H. Wolfenden; (May 16) A. S. Phillips; (May 17) A. A. Aylward, F. W. Ayres, L. W. Barber, C. C. Dangerfield, A. Grenville-Browne, D. P. Hickey, M. P. Kempner, H. Knowles, P. Payne, W. J. Rogers; (May 19) H. P Goddee-Kent, J. A. Moy-Thomas; (May 20) G. W. A. Ambrook, D. A. Reed; (May 26) W. E. Bruce, L. Oliver, R. Whitehead; (May 28) L. Vincent. W/O.: (May 16) J. Wylie. A/C.1.: (Mar. 19) E. M. Moore. As Act. P/Os. on probn.:—Flt. Sgt.: (May 9) W. W. Prickett. Sgts.: (May 16) A. E. Birch, F. Sherburn. Cpls.: F. M. Strong, R. D. S. Carpendale, R. V. Church, J. Overton, H. M. Mackay; (May 23) S. S. Marples, C. Stockdale. L.A/C.: (May 16) D. I. Lambert, C. R. Easton, A. Carswell; (May 23) A. H. Pickering. A/C.1: (May 16) J. Forrester, J. Todd; (May 17) H. Robinson; (May 23) R. S. Smith. A/C.2: (May 16) J. H. Dollan, F. J. Whitford, W. J. Witham, I. N. Locke, H. C. Monro, R. W. Pix, C. L. Flitton; (May 17) C. L. McNaughton; (May 23) R. G. Wingfield, J. A. Rowan, S. W. Fairweather, S. Howard-Lucy, S. A. B. Cox, C. N. Jones.

T. W. Sarll is granted a commn. as P/O. on probn. (July 28, 1940) (substd. for notifn. of Sept. 17, 1940).

The follg. P/Os. on probn. are confmd. in their appts. and promoted to war substve. rank of F/O.:—(Feb. 23) R. Foster; (Mar. 3) F. S. Brooks; (Mar. 9) R. F. Pearson, M.C.; (Mar. 10) H. Black; (Mar. 11) W. A. Pegge; (Mar. 15) P. E. Jackman, H. W. Moore; (Mar. 26) J. F. Sherrard; (Mar. 31) J. L. S. Fry; (Apr 2) E. N. Lohmeyer, D.F.C.; (Apr 4) R. F. Freeman; (Apr. 5) E. Bentley, E. W. Stewart; (Apr. 8) R. G. E. Diamant, A. C. L. D. Lees, J. Megner, E. C. Nock, M. E. Corfe; (Apr. 12) E. L. B. Jenkins; (Apr. 15) J. B. Issaca, R. C. Thring; (Apr. 19) E A. C. Bushell; (Apr. 19) J. J. P. F. Warner; (May 1) P. S. Davies; (May 2) R. H. Webster; (May 4) H. B. Jefferies, G. B. Ross, G. R. Southam; (May 6) H. B. Kennedy, M.C., S. W. J. Tanner; (May 16) S. T. Whitemore; (May 18) R. D. Ayliffe; (May 22) D. R. Norman; (May 25) A. R. Jones.

P/O. on probn. P. E. Hindmarsh is confmd. in his appt. as from Mar. 16 and promoted to war substve. rank of F/O. as from May 4.

P/O. on probn. H. J. Ketchen is confmd. in his appt. as from Mar. 29 and promoted to war substve. rank of F/O. as from May 16.

The follg. P/Os. are granted war substve. rank of F/O.:—(Sept. 21, 1940) E. R. Smouha; (Oct. 3, 1940) B. T. Anderson; (Oct. 5, 1940) S. H. Price; (Dec. 9, 1940) C. D. Wilson; (Mar. 15) S. H. Granville-Smith; (Mar. 29) C. W. Rippon, N. H. White; (Apr. 1) J. H. Herbertson, M.C., A. Holden; (Apr. 6) N A. Sinanian; (Apr. 20) D. J. Farquharson; (Apr. 24) T. M. Newbigging, J. H. Morren; (Apr. 28) H. O. Brown.

P/O. C. Winslow-Taylor is granted war substve. rank of F/O. (Mar. 22) (substd. for notifn. of May 23).

The follg. Act. P/Os. on probn. are graded as P/Os. on probn.:—(Mar. 14) H. O'Neill; (Mar. 28) G. A. P. Griffiths; (Apr. 4) A. S. Green, W. R. Cotton, R. Cobb, H. Bramsdon; (Apr. 11) H. D. Butcher, A. N Barrowcliffe; (May 1) A. S. Ireland; (May 2) R. E. Nall, H. G. Woods; (May 5) F. E. Watson; (May 9) O. S. Walker, V. W. Neate, C. H. Smith, T. V. J. Tilney, H. Gee, J. N. White, F. T. G. Bourke, N. F. King, H. W. Green, W. J. Cottrell, H. W. Aves, I. H. Sandiford, C. E. B. Du Cane; (May 16) L. Young, J. L. Walter, L. T. Field. R. B. Barnett, G. H. Windsor.

F/O. H. A. D. Currie is transfd. to General Duties Branch (Nov. 25, 1940).

P/O. on probn. Prince M. Imeretinsky is transfd. to General Duties Branch (Nov. 25, 1940).

The follg. are transfd. to Technical Branch:—Sqn. Ldr.: (June 10, 1940) H. R. P. Patterson. F/Os.: (Apr. 24, 1940) H. B. Jenkins; (Mar. 30) F. J. Balcombe. P/Os.: (June 1, 1940) H. H. W. Pope; (Sept. 5, 1940) M. F. Pring-Rowe. P/Os. on probn.: (Sept. 9, 1940) R. E. Cox; (Oct. 27, 1940) W. McMenemy; (Nov. 11, 1940) W. J. C. Nott; (Nov. 28, 1940) D. R. Crooke; (Jan. 12) J. L. Burbridge; (Mar. 2) J. R. R. Dunlop; (Mar. 26) F. R. Carter; (Mar. 28) E. Cumming; (Mar. 30) P. F. Blackman, J. E. F. Voss; (Apr. 21) D. R. H. Dickinson, W. C. L. Kent, O. N. Thompson; (Apr. 23) M. W. N. Abbott, J. R. Billington, F. C. Cooper, R. M. Cracknell, H. F. J. Coe, W. H. K. Camm. L. A. Daniel, E. S. Hamilton, W. G. Mackay, J. E. Stephenson, H. S. Tegner, O. H. Wright; (May 7) G. S. Stuart, W. F. Simpson, S. H. Sharp. H. J. Thompson, J. F. Tweedie, J. B Wilson; (May 14) C. W. Slatter.

The comms. of P/O. on probn. Sir J. S. Knill, Bt., is terminated on cessation of duty (May 31).

SERVICE AVIATION

Training Branch.

The follg. are granted commns. for durn. as Act. P/Os. on probn.:—(Feb. 1) C. M. Annan, St. J. F. Bell, A. Brown, O.B.E., J. F. Bulleid, A. Butler, C. J. S. Caleb, S. J. Dann, I. Deane Jones, J. Denton, S. W. W. Field, A. R. Gill, H. H. N. Hackett, K. O. Lane, H. L. Langdon, W. A. Manhire, E. F. J. E. Marshall, A. J. P. Martin, G. D. T. Mather, F. D. Mills, E. Morrison, J. M. Purkis, S. H. Pickard, H. G. Pitt, J. E. Potter, A. F. Rapson, A. J. Rea, T. Reay, J. H. Sheldon, J. J. Treacher, G. L. Wallace, L. Whittington; (Feb. 11) N. Andrews; (Feb. 12) C. G. Horseman; (Feb. 13) L. D. P. Joseph; (Feb. 14) V. H. Simms; (Feb. 17) E. Groves, L. Marshall; (Feb. 18) A. F. Mitchell; (Feb. 19) G. F. Butler, J. McPherson; (Feb. 21) R. J. T. Taylor, W. L. West, F. E. Western; (Feb. 22) J. R. N. Moss, W. H. Sparkes; (Feb. 24) A. England, J. Jones (Feb. 25) H. S. Hopkins, F. Maunsell, W. R. Thorning; (Feb. 26) A. C. Batt, A. T. Knight, T. McC. Yarwood; (Feb. 27) H. Allan, R. J. Austin, F. W. Jackson. E. L. Prescott, S. R. Sharpe; (Feb. 28) S. J. Courtney, T. H. James, W. C. Miall, P. J. O'Connell, E. H. Pearson, J. M. Rimmer; (Mar. 1) M. J. G. Hearley, W. T. Pogmore. R. H. Reffell, F.M.S.; (Mar. 3) G. F. Baker, T. Bennett, D.C.M., H. J. Blackwell, E. F. Le Feuvre, D. M. Lindsay, K. Macleod, K. Pask, L. Rees, J. J. Smyth, L. E. Yeoman, G. Yorke; (Mar. 4) C. Brooks, D. C. Hicks, T. Norman, A. E. B. Webb; (Mar. 5) A. C. Burgess, A. G. Mansfield; (Mar. 6) W. W. Barnes, W. C. Pond; (Mar. 7) F. Willott; (Mar. 8) P. C. Knott, A. Monkman, F. C. Pine, K. B. Swann; (Mar. 10) R. Bell-Jones, N. H. Burnell, J. Cross, R Cummings, E. B. Darlington, A. F. Peterson, R. R. Thomas, J. W. Troup; H. F. Wetson; (Mar. 12) W. V. Faulkner, J. C. Molyneux; (Mar. 13) G. S. Brown, J. A. Grange, D. W. James, H. G. Ludlow, R. A. Maples, H. C. Nest, C. G. Nobbs, R. J. Porteous, F. A. Stamp; (Mar. 14) H. H. Clarke, G. D. James, J. W. Turner; (Mar. 15) R. J. Porteous, F. A. Stamp; (Mar. 14) H. H. Clarkson, J. A. Cunningham, A. Duckworth, B. R. W. Hill, C. Joslin, S. A. Perrin, T. T. Richards, W. Sugden, F. A. Tanner, H. Turner; (Mar. 18) J. A. Chamberlain, F. Cornwall, D. J. Elton, A. K. Jeffery, A. McLeod, H. C. Rycroft, E. L. Shimmin, E. C. Sykes, G. T. P. Tarrant, J. W. Thomas; (Mar. 19) C. J. Clarke, G. A. Cowie, D. D. Dewar, W. E. Jones, T. M. Kelso, N. S. Mercer, T. L. Morris, J. Muir, B. J. Raffle, T. Spowart, J. S. Thom, T. L. Wright; (Mar. 20) A. Arkinstall, P. Mahon, G. F. Middle, H. I. O. Smith; (Mar. 21) F. E. Bourton, J. R. Lindley, S. V. Perfect, A. Poynton, E. R. Robinson, H. J. Sargeant, L. J. Styles, S. Tillotson; (Mar. 22) R. C. McKechney, G. C. Mangham; (Mar. 24) F. Brady, M. W. Dann, W. H. Fryer, H. B. Goundry, J. Hurst, E. G. Jones, G. R. Pointer, B. Ramsell, W. C. Walker (Mar. 25) W. E. Baragwanath, W. A. Harlen, A. S. Hedden, J. J. Hurlock, L. H. Lomas, F. S. Mangham, G. H. Northing, G. Scott, R. Stock, G. H. Tarras, C. F. Yates; (Mar. 26) M. O'Brien, J. L. Pasquill, R. T. B. Schreiber, I. Smith (Mar. 27) W. B. Bucquet, I. Howells, W. E. Robson, A. Rigby; (Mar. 28) G. O. Abeolom, J. C. Bryson, D. P. Figgins, J. C. Graham, J. G. Graham, L. W. Hamp, J. M. Hogan, J. Houstoun, G. Johnston, J. F. Maitland, G. McMullan, D. M.-G. Newburn, F. J. Quinn, G. Reay, A. W. Riley, W. J. Shelley, N. V. Wilson, D.S.O., M.C., G. A. Winterton, J. M. D. Young (Mar. 29) S. R. Beaumont, H. H. Crowther, D. G. Richards, R. W. Shaw; (Mar. 30) W. E. Meade, H. R. Richards; (Mar. 31) S. Davidson, T. W. Hirst, A. B. Searle, G. E. Stanway, G. T. Stevenson, R. T. Stratton; (Apr. 1) J. E. Clarke, W. J. Corney, C. D. Dixon, J. R. Dronsfield, P. G. Heafford, P. G. Hislop, F. G. Jakeman, G. F. Merrill, A. R. F. Palmer, A. V. Pavord, J. W. Royston, C. H. Spawls, P. C. Waite, W. R. Walbeley, G. Wood; (Apr. 2) H. Bell, J. Burlie, G. S. Grange, F. W. Roberts, W. E. Wilson; (Apr. 3) J. M. Arlidge, T. E. Askew, J. D. Campbell, F. S. Claxton, R. H. Davies, M. Jones, W. J. T. Jones, C. H. S. Kew, C. L. Magnus, F. H. Mott, B. L. Middleton, D. Sorrell, E. A. Stiff, A. E. Thomas; (Apr. 4) F. Brown, R. W. K. Edgington, H. C. Lee, B. L. Rees; (Apr. 5) J. McGregor, F. P. Rose; (Apr. 7) E. F. J. Felix, W. J. Jenkins, G. F. McLelland-Brown, J. H. Stark. C. G. Watts; (Apr. 8) E. D. Aseray, H. F. Dussek, E. D. Liddiard, E. G. Longbottom, J. Penninghame, C. W. G. Phillips, F. C. Restall, H. J. Rogers, D. G. Shail; (Apr. 9) H. E. Alty, S. W. Fisher, M. Fortescue-Brickdale, E. J. Jones, R. C. Lester, H. R. Mountford; (Apr. 10) F. G. Forrest, D. W. Mackenzie; (Apr. 11) H. Jarvis, J. T. W. Nevitt, (Apr 12) R. V. C. Barrett, J. J. W. H. Dunsford, N. W. Ivison, V. E. Shearme; (Apr. 13) R. E. Jackson; (Apr. 15) C. Emmott, E. C. Heaney, F. Oakley, D. L. W. Schofield, V. H. Wood; (Apr. 16) P. W. Borthwick, E. C. W. Bull; (Apr. 17) H. E. B. Lakin; (Apr. 18) G. Evans; (Apr. 19) T. K. Alexander, A. France, W. T. McNelly, R. J. Overton, M. Pemberton; (Apr. 23) E. Riley; (Apr. 24) F. H. Scharer, A. C. West; (Apr. 25) J. R. Plant, C. E. Pritchard, A. E. Robinson; (Apr. 28) T. MacD. Baker, W. P. Baron, A. E. Beddow, A. E. Swann, R. J. Woodward; (Apr. 29) R. A. Bale; (May 1) C. C. Bell, F. W. Blackburn, W. J. Fairbairn, H. F. A. Hammond, G. Harrison, H. W. Peterson; (May 2) R. A. Baker; (May 9) R. F. Barrington; (May 12) J. L. Bilsborrow; (May 14) J. W. Tebble; (May 15) I. Evans, J. H. Finney, P. A. Jones.

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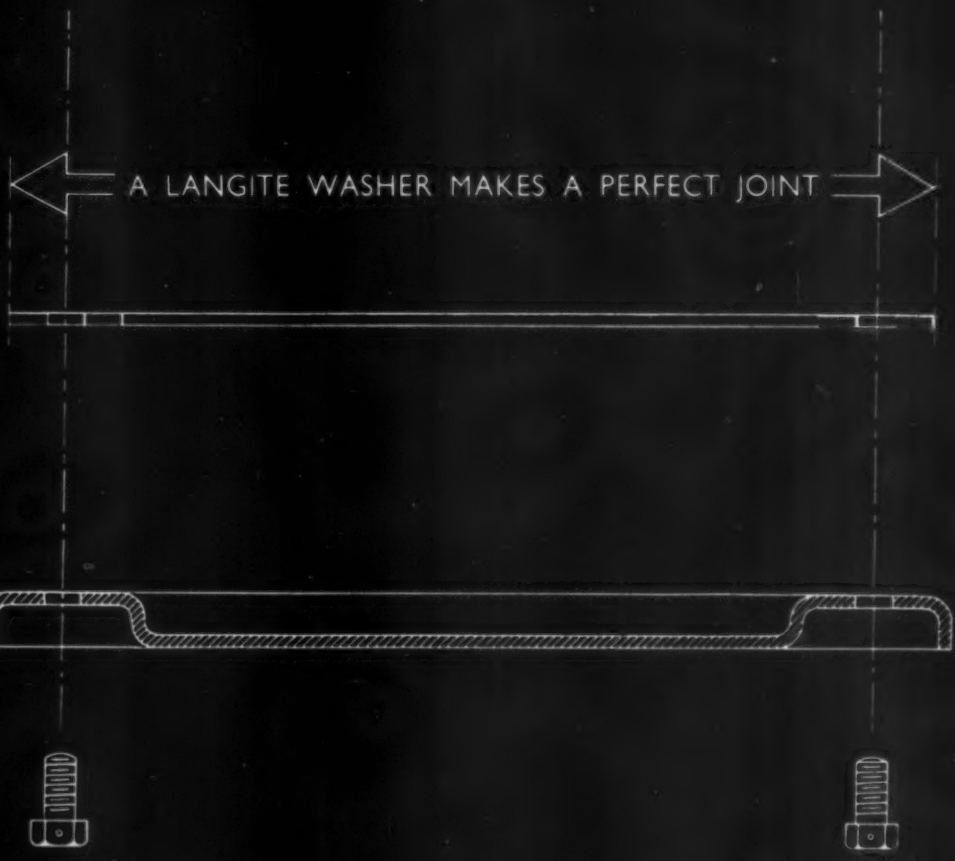

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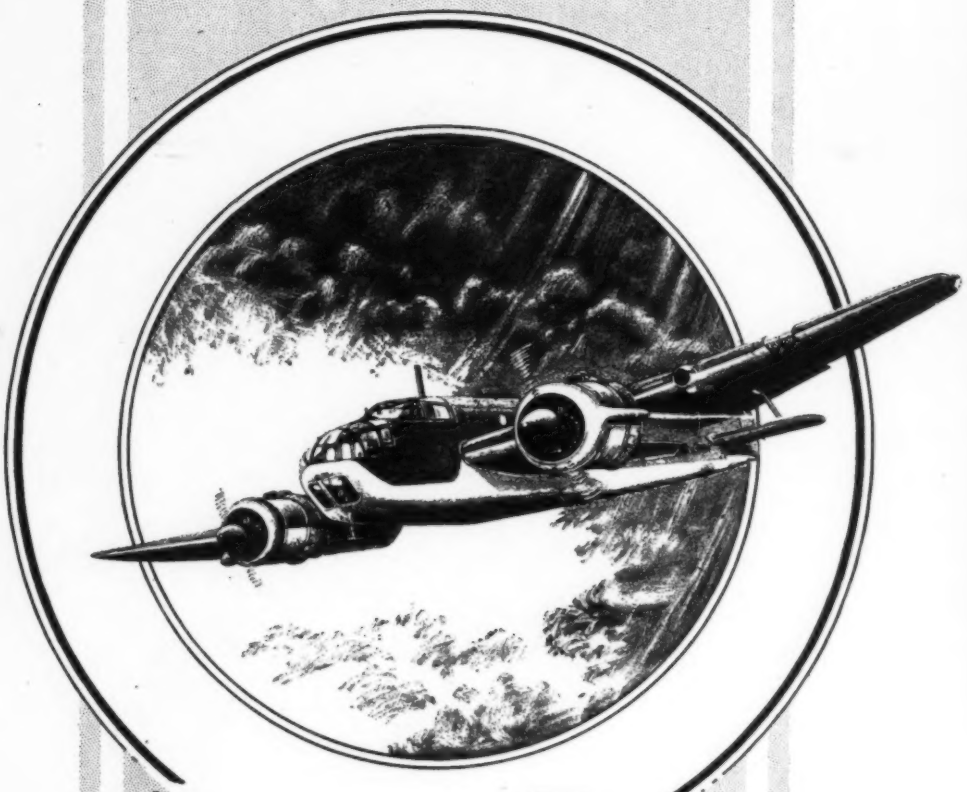

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" You should complain ! " says he. " If it wasn't for us designers where would you be? You've been boasting for years that your tools can tackle any production problem ; you've made your name by devising tools to do difficult jobs, and now you bite the hand that has fed you ! When we mark holes to be drilled in awkward places ; or expect nuts to be tightened where there's no room to swing a spanner, we do so not from ignorance or cussedness, but because by so doing we save weight, add strength or something.

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Well, let's admit that the gentleman has a great deal on his side. Let's admit that when we pulled the legs of designers, we did so to get round the right side of the production people. Let's admit anything except the statement that we've " been boasting for years." Boasting ! Desoutters boasting ! Words fail us.

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POINT No. 1. Skilled men are needed for the really skilled jobs. Be sure that each of your men is employed up to the very limit of his skill. Combat skilled labour shortage by breaking down processes wherever you can, and by training up your workpeople, both men and women, to jobs of greater skill.

POINT No. 3. Prepare, now, to employ more and more women. Look constantly to women for your new recruits; they are excellently suited to many types of semi-skilled work. Hundreds of thousands must enter war production this year and every factory must play its part.

POINT No. 4. Efficient personnel management is essential. Remember that you must secure the whole-hearted co-operation of your workpeople. Look closely to their welfare. Many of them may be new to industry; be patient and help them all you can during the first difficult weeks. A little foresight will reduce your labour turnover.

ADVICE GLADLY GIVEN ON THE DEVELOPMENT OF A TRAINING SCHEME IN YOUR WORKS.

If you feel you would like advice on the development of training in your works, remember that the Labour Supply Inspectors of the Ministry of Labour and National Service are ready and anxious to assist you. You can reach them through the Manager of your Local Employment Exchange. You can obtain full particulars of the Government Training Schemes from the Inspectors or from the Exchange.

REMEMBER! if you have not yet received your copy of "THE EMPLOYMENT OF WOMEN . . . SUGGESTIONS TO EMPLOYERS" instruct your secretary to write for one to-day, asking for pamphlet 87/1941 to the Manager of the nearest office of the Ministry of Labour and National Service.

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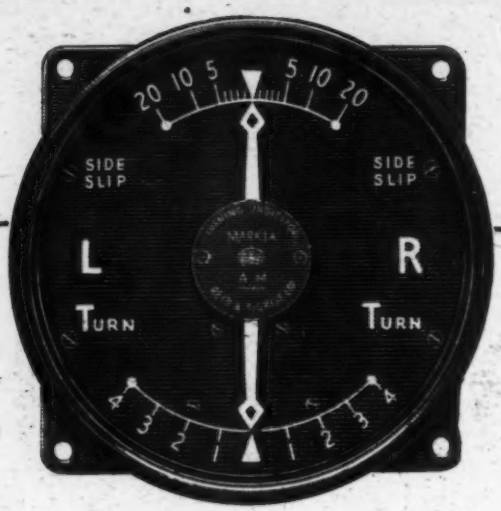

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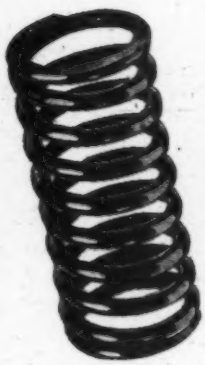

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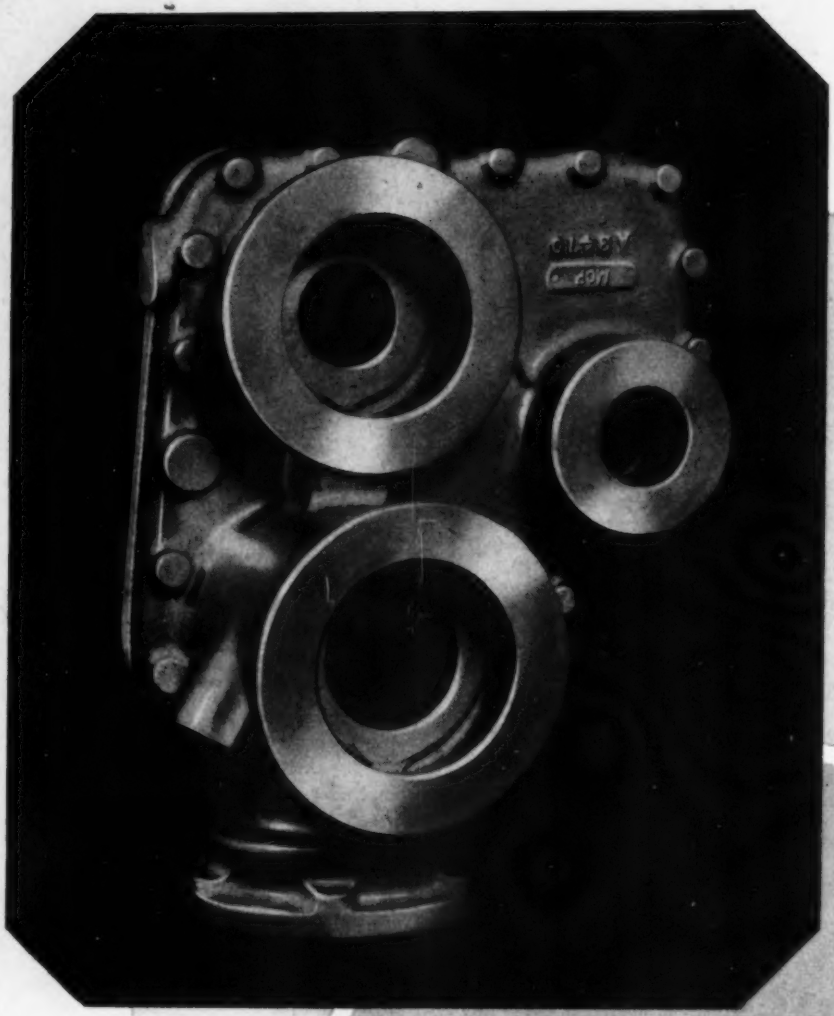

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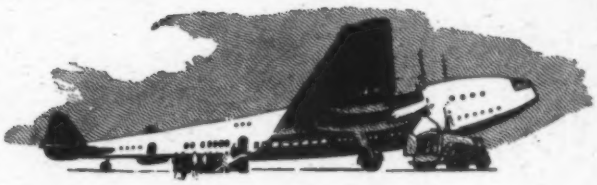

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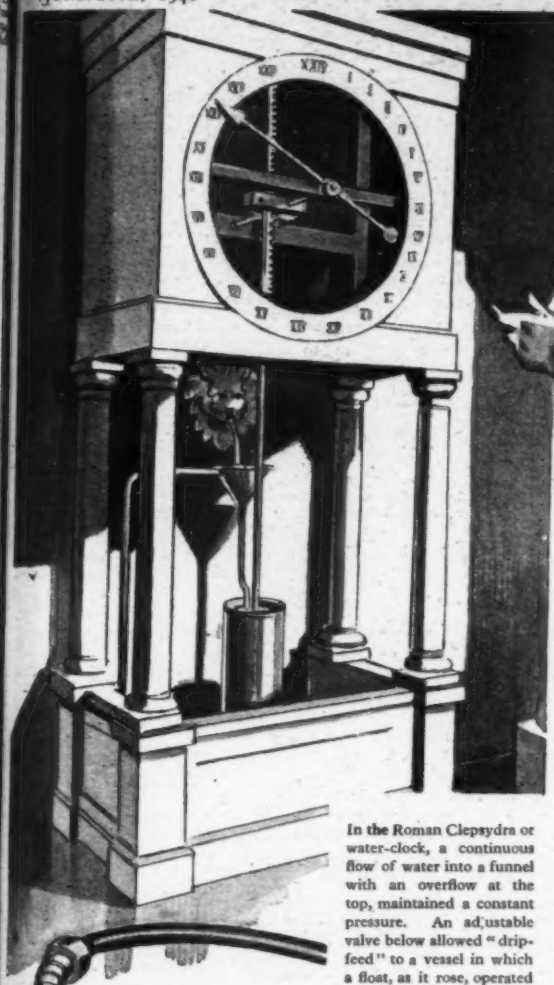

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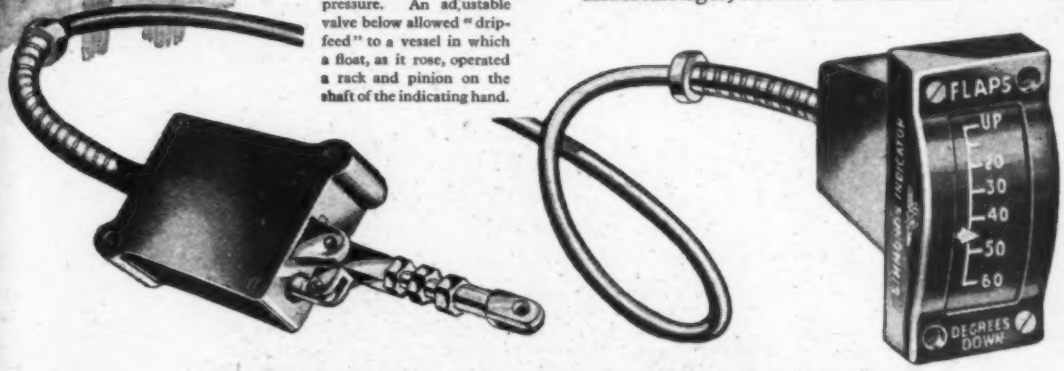

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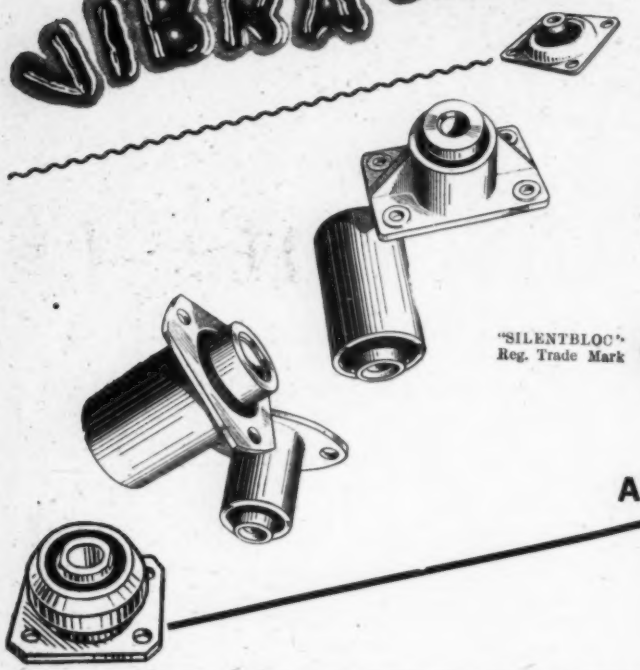

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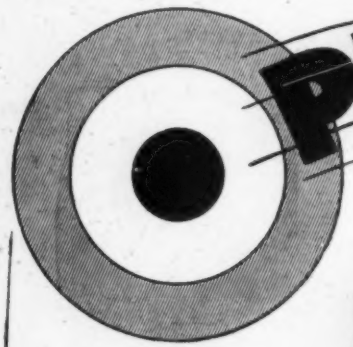

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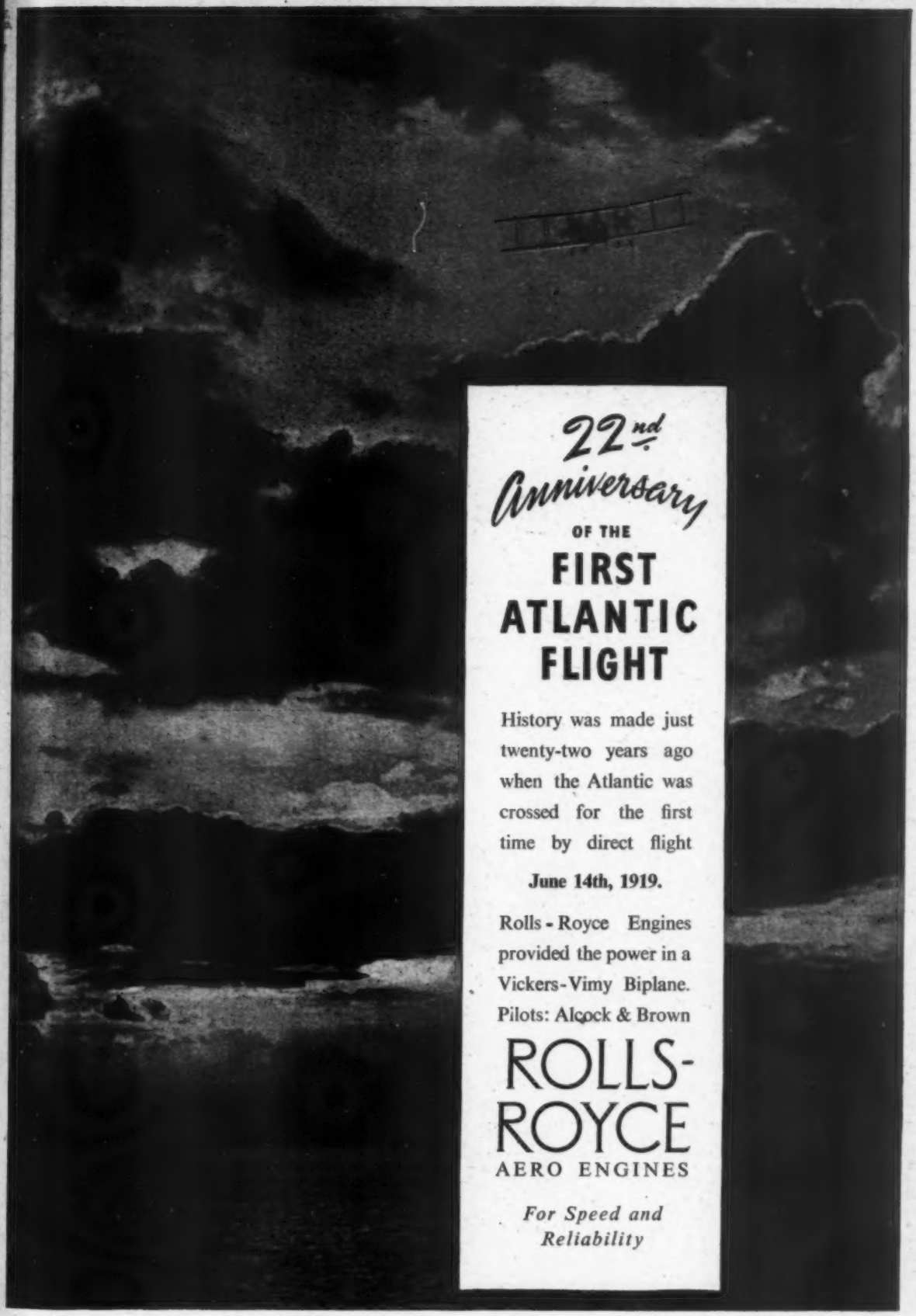
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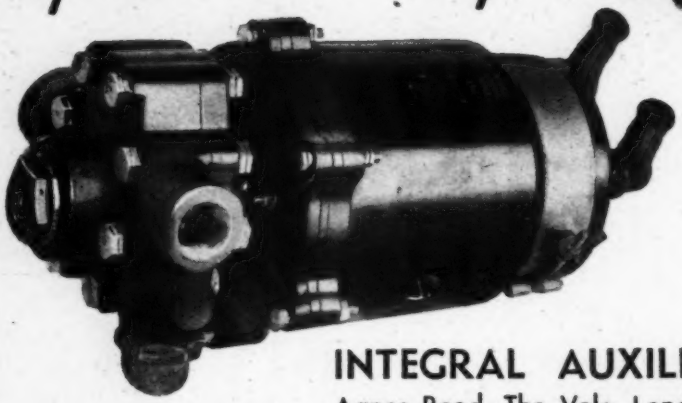

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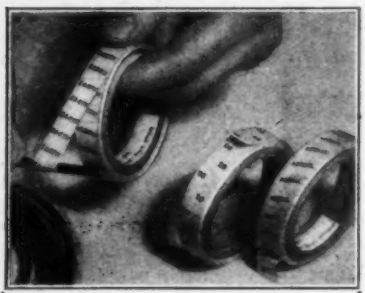

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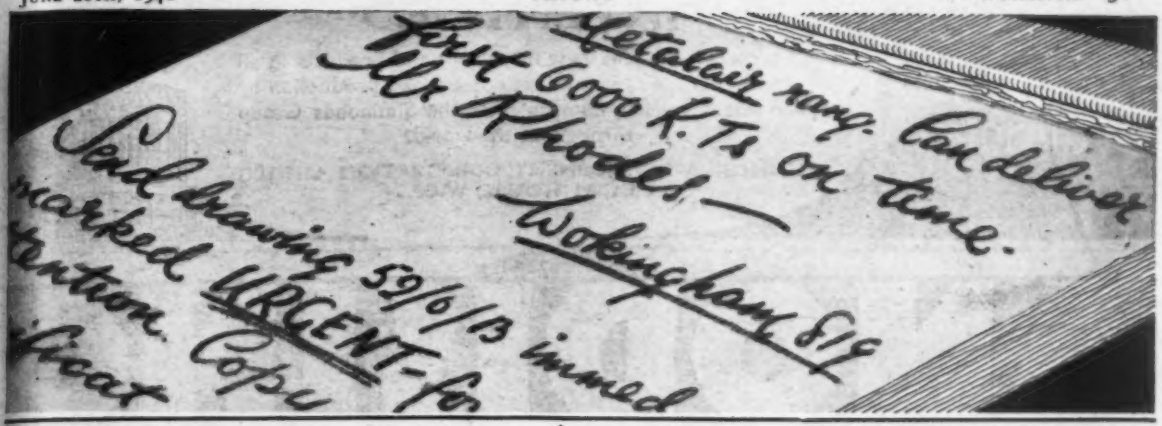

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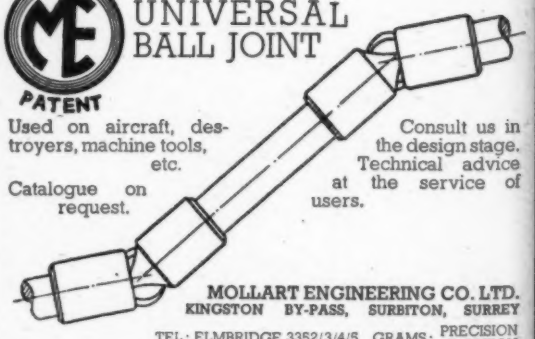

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